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GASTRODUODENAL ULCERS

PARTIAL GASTRECTOMY VERSUS GASTRO-ENTEROSTOMY IN THEIR SURGICAL TREATMENT *

RICHARD LEWISOHN, M.D.
NEW YORK

The proper surgical treatment of gastric and duodenal ulcers is a much debated question at the present time. For many years gastric and duodenal ulcers were treated by gastro-enterostomy. It soon became evident to a number of surgeons that simple gastro-enterostomy did not affect the life cycle of a gastric ulcer. When pylorospasm accompanies gastric ulcer, gastro-enterostomy may relieve symptoms. However, it does not in any way minimize the dangers of a penetrating gastric ulcer; viz., perforation, hemorrhage and malignant degeneration. Furthermore, gastro-enterostomy not only fails to cure the gastric ulcer but renders the patient liable to the development of a gastrojejunal ulcer.

In an attempt to attack gastric ulcers by a direct method, the following procedures were gradually developed:

1. *Local Excision, With or Without Gastro-Enterostomy.*—Local excision is applicable only in very small ulcers which are freely movable and do not involve the posterior wall of the stomach. The majority of gastric ulcers extend to the posterior wall and are adherent to the pancreas. In these cases a safe suture of the stomach wall following local excision is technically most difficult. Furthermore, local excision of the stomach is nearly always followed by motor disturbances distal to the plane of excision.

2. *Sleeve Resection.*—Sleeve resection in our experience may be followed by the development of an hour-glass stomach, with the attendant disturbances in motility.

3. *Partial or Subtotal Gastrectomy.*—This method removes the ulcer, the ulcer-bearing area and the pylorus *en masse,* and has given excellent results. We have patients under observation at present in whom this procedure had been employed by Dr. Berg more than fourteen years ago. They are free from any symptoms, in spite of the fact that in some instances more than two thirds of the stomach was removed.

This method is now considered the method of choice for gastric ulcers in many clinics, and both operative and late results are very gratifying.

Thus we see that in gastric ulcers the pendulum has gradually swung toward radical surgery, which has been followed by permanent relief, after more conservative procedures had failed to give satisfactory end-results.

When one peruses the recent American literature dealing with the surgical treatment of duodenal ulcers, the picture is entirely different. The majority of surgeons assert that simple gastro-enterostomy, even without local excision of the ulcer, is a perfectly satisfactory operative procedure. In some clinics, Finney's pyloroplasty is used in suitable cases.

Among European surgeons, especially in Germany and Austria, gastro-enterostomy as the method of choice in the surgical treatment of duodenal ulcers has been gradually replaced by partial gastrectomy. In 1920, Haberer [1] showed that if duodenal ulcers are treated by the same procedure as gastric ulcers—namely, by partial gastrectomy—the same excellent end-results are obtained.

It seems rather inconsistent to discard gastro-enterostomy for gastric ulcers and to hail it as the ideal method for the surgical treatment of duodenal ulcers. After all, there is no fundamental difference between gastric and duodenal ulcers, with the exception of the possibility of malignant degeneration. The marked inflammation of the distal portion of the stomach, Konjetzny's gastritis,[2] is found to the same degree in gastric as in duodenal ulcers. European surgeons usually speak of "gastroduodenal" ulcers, thus pointing out the similarity of the two conditions.[3]

This service and our medical colleagues at Mount Sinai Hospital have been greatly dissatisfied for a number of years with the results of gastro-enterostomy in duodenal ulcers. Following Haberer's publication I made a careful survey of ninety-two patients operated on between 1915 and 1920 and reexamined in 1923, and published the following results:[4] Forty-seven per cent of the patients were cured; 19 per cent had slight complaints, and 34 per cent suffered from gastrojejunal ulcers.

These figures induced us in November, 1922, to adopt partial gastrectomy as the method of choice in the treatment of duodenal ulcers. Gastro-enterostomy has practically disappeared from this service, and is employed only in those cases in which strict contraindications make the use of the more radical procedure inadvisable.

* From the Surgical Service of Dr. A. A. Berg, Mount Sinai Hospital.
* Read before the Section on Surgery, General and Abdominal, at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Haberer, H.: Anwendungsbreite und Vorteile der Magenresektion Billroth I, Arch. f. klin. Chir. **114**: 127, 1920.
2. Konjetzny, G. E.: Zur chirurgischen Behandlung der chron. Gastritis, Arch. f. klin. Chir. **129**: 139, 1924.
3. Pannett, C. A.: The Surgery of Gastroduodenal Ulceration, New York, Oxford University Press, 1926.
4. Lewisohn, Richard: The Frequency of Gastrojejunal Ulcers, Surg. Gynec. Obst. **40**: 70 (Jan.) 1925.

I pointed out in my article [4] that the frequency of gastrojejunal ulcers was not due to any error in our technic, as gastro-enterostomy is a well standardized procedure. The large percentage was explained by the accurateness of our follow-up system, which included a very careful personal examination of the patients.

Woolsey [5] has ascribed the high incidence of gastrojejunal ulcers among our patients to the fact that we were dealing with a large number of Jewish patients, and that the Semitic race is more subject to the recurrence of ulcers than other races. It is true that the vast majority of our patients at Mount Sinai Hospital are Jews. However, this question does not enter into the argument. I am sure that if we should examine another group of patients from other hospitals with the same accuracy that we employed in this group, we would be led to the same conclusions.

I submitted this question to Haberer and received the following answer:

> The statement that gastro-enterostomy is followed by worse results in Jewish than in other patients is absolutely incorrect. I have among my patients less than 2 per cent of Jews; among those there are a number of gastrojejunal ulcers. These patients are as healthy today, following a subtotal gastrectomy, as the Gentile patients. I have never noticed any difference as to operative results between Jewish and Gentile patients.

Prof. Raffaele Bastianelli of Rome told me recently that he was under the impression that 25 per cent of his gastro-enterostomy patients developed trouble, probably as a result of gastrojejunal or jejunal ulcers. He states that there are almost no Jews among his patients.

The gastro-enterologic surgical service at Mount Sinai Hospital was organized in 1914. Between 1914 and 1922, gastro-enterostomy was the method of choice in operations for duodenal ulcers. During the last five years, we have used the major operation of partial gastrectomy in practically every case of duodenal ulcer. We have been highly satisfied with our results, and would not turn back to gastro-enterostomy as a routine procedure. The observation time of up to five years seems long enough to allow conclusions as to end-results. Undoubtedly, recurrences may be observed even after ten years and more. However, it is a well known fact that most recurrences are observed during the first two to three years following the primary operation.

While we have had some failures and while some patients have not been entirely cured, we feel that in replacing gastro-enterostomy by partial gastrectomy we have reduced the bad results following the surgical treatment of duodenal ulcers from 50 per cent to about 5 per cent. This figure comprises all those patients who have any untoward symptoms, even those with very slight complaints.

If has never been explained why gastric and duodenal ulcers are so frequent in men and so rare in women. Ninety per cent of the ulcers occur in the male and only 10 per cent in the female. In looking over my records of cases of congenital pyloric stenosis, I found that I was dealing with the same proportion. It is indeed very rare to see a little girl suffer from congenital pyloric stenosis. Fraser,[6] in his recent book on surgery of childhood, gives the same proportion (9:1). It is certainly most interesting that the preponderance of the male sex in the tendency to inflammatory diseases of the pyloric region is already evident in the new-born infant. To my knowledge, this analogy between congenital pyloric stenosis of the baby and the gastroduodenal ulcers in the adult has not been mentioned in any discussion on the etiology of ulcers.

5. Woolsey, G.: The Question of Gastro-Enterostomy in Duodenal Ulcers, Surg. Gynec. Obst. 42:90 (Jan.) 1926.
6. Fraser, John: Surgery of Childhood, New York, William Wood & Company, 1926.

DISADVANTAGES OF GASTRO-ENTEROSTOMY

It would be impossible to discuss in detail in this short presentation all the points which might be brought forward against gastro-enterostomy. We have to be satisfied to mention briefly a few of the more important ones:

1. Gastro-enterostomy fails to cure duodenal ulcers in a large number of instances. Many duodenal ulcers have been removed in this service by partial gastrectomy when the ulcer was still in its active stage, in spite of the fact that a gastro-enterostomy had previously been performed at other hospitals.

2. Local excision of a duodenal ulcer, followed by a gastro-enterostomy, is usually referred to in the surgical textbooks as a very practical and simple method for the cure of duodenal ulcers. It is evident that this procedure is applicable only in those cases in which the ulcer is situated on the anterior wall of a movable duodenum. It has been our experience that this location of the ulcer is comparatively rare. The vast majority of ulcers are situated on the superior and posterior wall of the duodenum, where local excision is not feasible. Furthermore, single ulcers are by no means common. We find in most of our specimens, removed by partial gastrectomy, two or more ulcers, surrounding the duodenal lumen like a chain. In many instances we were able to palpate only those ulcers which were situated on the anterior and superior wall, whereas the others situated at the posterior aspect could be demonstrated only after dissection of the duodenum or on the specimen. This experience entitles us to state that when a single ulcer on the anterior wall is excised locally, other ulcers located in less accessible parts of the duodenum may easily be overlooked. Naturally, the same error may occur in Finney's pyloroplasty, which removes ulcers only on the anterior wall of the duodenum.

3. Gastro-enterostomy is usually acclaimed as the ideal method in healed pyloric or duodenal ulcers with secondary stenosis. We find that it is practically impossible to state definitely by palpation whether an ulcer is healed. We thought in a number of instances that we were dealing with a healed ulcer, whereas the specimen showed that the ulcer was still active. Furthermore, an ulcer which is healed today may become active tomorrow. Crohn [7] has pointed out the importance of the life cycle in gastric and duodenal ulcers.

4. Gastro-enterostomy is often advocated as the primary operation, to be followed by partial gastrectomy if gastro-enterostomy has proved a failure. However, a previous gastro-enterostomy which has failed to heal the duodenal ulcer, or has caused a gastrojejunal ulcer, makes a secondary gastrectomy an operation of considerable magnitude and of grave risk to the patient.

5. Gastro-enterostomy does not safeguard the patient against subsequent hemorrhages from a duodenal ulcer. We have seen a number of patients in this service with massive hemorrhages, in spite of the fact that they had been subjected to a gastro-enterostomy a number of years previously.

7. Crohn, B. B.; Weiskopf, Samuel; and Aschner, P. W.: Healing of Gastric Ulcers, Arch. Int. Med. 37:217 (Feb.) 1926.

6. Gastro-enterostomy does not produce a marked reduction in gastric hyperacidity, whereas partial or subtotal gastrectomy produces an achlorhydria in the vast majority of the cases. I have discussed this subject at length in two previous papers.[8] It was found that an achlorhydria is established following gastro-enterostomy in 3 per cent of the cases, whereas 75 per cent of the patients who have been subjected to partial or subtotal gastrectomies show an absence of free hydrochloric acid in the Ewald test meals.

Achlorhydria seems to be of greatest importance in the prevention of gastrojejunal ulcers. At least, we have never seen a gastrojejunal ulcer develop in the absence of free hypdrochloric acid. Balfour,[9] on the other hand, has stated recently that, in 20 per cent of the cases of gastrojejunal ulcers observed in the Mayo Clinic in which repeated and fractional examinations of the gastric contents were made, achlorhydria was present. This marked difference in the observations of two clinics makes further careful studies along these lines advisable before this point can be settled definitely.

Klein [10] has shown recently that an Ewald test meal may show absence of free hydrochloric acid, whereas a Rehfuss test may show a moderate or considerable amount of free hydrochloric acid, when employed for more than two hours.

7. The opinion is usually expressed that gastro-enterostomy has a negligible mortality as compared to partial gastrectomy. It must be stated in this connection that statistics from three of the leading hospitals in New York published in recent years show a mortality rate for unperforated ulcers ranging between 7 and 10 per cent. The statistics of Eiselsberg,[11] Haberer,[12] Friedemann [13] and Bohmansson [14] for partial and subtotal gastrectomy show a lower mortality rate (about 5 per cent).

Distribution of Cases in Which Operation Was Performed

Year	Number of Cases	Year	Number of Cases
1920	2	1924	8
1921	3	1925	7
1922	3	1926	7
1923	14		

I have performed partial and subtotal gastrectomies for gastric ulcer since 1920, and I have used the same operation for duodenal ulcer since 1923. My material comprises forty-four patients operated on between 1920 and 1926. The number of cases in different years is demonstrated in the accompanying table.

The number of my cases is very small, and hardly sufficient to furnish conclusions as to the value of the method. However, I had the privilege, through the courtesy of Dr. Berg, of observing the majority of his cases, which number, to date, more than 400. Thus, my general conclusions on the value of this procedure are based on a fairly large material.

Eighteen patients had a gastric ulcer; three patients a pyloric ulcer, and twenty-three patients duodenal ulcers.

Three deaths occurred in this series, one in 1922 and two in 1923 (mortality 6.7 per cent). It is interesting to note that the two patients (cases 7 and 15) in whom an antecolic gastro-enterostomy was used (one with and one without entero-anastomosis) both died. These two operations for gastric ulcer were performed at a time when we were still experimenting with different forms of anastomosis, and before we had standardized our technic. In both cases extensive resections were made, and I felt at the time that the anterior anastomosis was preferable. I have since performed even more extensive resections and anastomosed the stomach and jejunum by the retrocolic route. I feel sure that the postoperative peritonitis from which these two patients died would not have occurred if the retrocolic route had been used. An antecolic anastomosis is apt to produce leakage, when the distended colon begins to press on the suture line. I would not use an antecolic anastomosis again, except in those rare cases in which an anomaly or absence of the mesocolon prevents us from applying the much better method; i. e., the retrocolic anastomosis.

Without entering into a discussion of the different points of technic, I should like to state that we have two methods at our disposal, either the Billroth I, or the retrocolic Billroth II (either in the form of the Hofmeister or the Polya anastomosis). These two methods were used in forty-two cases with one death (case 18: Finsterer resection), a mortality of 2.3 per cent.

Operations for gastrojejunal ulcers and operations performed during or immediately after a profuse hemorrhage are not included in this survey. It is evident that they offer a different surgical problem with a larger mortality.

I have performed three gastro-enterostomies since November, 1922, when we began to perform partial gastrectomies for duodenal ulcer. One patient suffered from severe asthma; another patient had marked emphysema, and the third patient had cerebrospinal syphilis. The contraindication was the poor condition of the patient.

Severe diseases of the kidneys, lungs and circulatory apparatus should naturally be considered contraindications to partial gastrectomy. Furthermore, some ulcers may be located in such close proximity to the common duct that radical removal should not be attempted. In this very rare group of cases, gastro-enterostomy or Finsterer's "Resection zur Ausschaltung" should be performed.

I have been in close touch with thirty-seven of my patients and have examined them at short intervals. I cannot trace four patients. A small series of cases, as that here reported, has the advantage that a personal frequent examination in the follow-up clinic is feasible. Thirty-five patients are in perfect health to date. It is, of course, possible that some of them may develop recurrent symptoms at a later date.

I have had two failures among these thirty-seven patients (5 per cent). Both patients belong to the early cases (one was operated on in 1923, the other in February, 1924). The abdomen was opened in both cases through a right rectus incision. Evidently a comparatively small part of the stomach was removed,

8. Lewisohn, Richard; and Feldman, R. H.: Failure of Gastro-Enterostomy to Effect a Decisive Reduction in Gastric Acidity, Ann. Surg. **82**: 925 (Dec.) 1925; Lewisohn, Richard; and Ginzburg, L.: The Relation of Postoperative Achlorhydria to the Cure of Gastric and Duodenal Ulcers, Surg. Gynec. Obst. **44**: 344 (March) 1927.

9. Balfour, D. C.: Occurrence and Management of Gastrojejunal Ulcer, Ann. Surg. **84**: 271 (Aug.) 1926.

10. Klein: Gastric Secretion After Partial Gastrectomy, J. A. M. A. **89**: 1235-1239 (Oct. 8) 1927.

11. Eiselsberg, H.: Die chirurgische Behandlung des Magen-Darm Ulcers, Acta chir. Scandinav. **59**: 71, 1925.

12. Haberer: Indications-stellung für die chirung. Behandlung bei boesartigen und gutartigen Erkrankungen des Magens u. Duodenums auf Grund von Erfahrungen an 1,432 eigenen Faellen, Samml. zwangloser Abhandl. a. d. Geb. d. Verdauungs- u. Stoffwechsel Krkh., 8, 7, 1923.

13. Friedemann, M.: Ueber die Leistungsfaehigkeit der grossen Antrum- Pylorusresektion bei der Geschwuers-Krankheit des Magens u. Zwoelffingerdarms, Deutsche Ztschr. f. Chir. **192**: 191, 1925.

14. Bohmansson, G.: Studien ueber die chirurg. Behandlung von Gastro-duodenal Geschwueren, Acta chir. Scandinav. (supp. 7) **60**: 1, 1926.

as both patients always showed a considerable amount of free hydrochloric acid after operation. A median incision gives much better access to the proximal portion of the lesser curvature than an incision through the right rectus. For this reason, the median incision is now the incision of choice for partial and subtotal gastrectomies.

I had performed a Billroth I operation on the first patient. He has undoubtedly a recurrent ulcer. He has not been subjected to a secondary operation, as he suffers from polyarticular rheumatism.

The second patient was brought to Beth Israel Hospital a few months ago with an acute perforation of a jejunal ulcer, exactly opposite the stoma. This man had been under observation for recurrent symptoms, and in spite of the fact that the roentgen-ray examination was negative, the clinical diagnosis of gastrojejunal ulcer was evident. He had improved temporarily under rest and diet, when the ulcer suddenly perforated. He was brought to the hospital immediately, and I operated on him four hours after the onset of the acute symptoms. I found a free perforation of a jejunal ulcer. I resected part of the stomach with the stoma and the perforation, and performed an end-to-end anastomosis between the afferent and efferent loop of the jejunum, and a Polya anastomosis between the stomach and jejunum. He made an uneventful recovery.

These two cases demonstrate very well the importance of a postoperative achlorhydria for the permanent cure of gastric and duodenal ulcers, a subject which I have discussed at length in a recent paper.[15] I feel sure that if I had removed half of the stomach at the primary operation, both patients would have been spared the recurrence of their symptoms.

The subject of partial gastrectomy for duodenal ulcers will probably find wide discussion during the next few years. For this reason, an exact terminology seems important. Local excision of an ulcer should not be called resection. The term "resection" should be reserved for partial or subtotal gastrectomy.

Furthermore, pylorectomy should not be confused with partial gastrectomy. I have pointed out in a previous paper [8] that pylorectomy for pyloric or duodenal ulcer does not produce achlorhydria and thus does not prevent gastrojejunal ulcers. Douglas [16] says, "Cole and Hoguet have reported a large marginal ulcer after a Polya operation, and Lewisohn three cases following Billroth II operations." Hoguet's case was not a partial gastrectomy, but a pylorectomy. The reason that my three cases (two from our service and the third performed by another surgeon), to which Douglas refers, were followed by gastrojejunal ulcers was, as stated in my paper, that they were pylorectomies and not partial gastrectomies, and that pylorectomy does not produce postoperative achlorhydria.

It may be of interest to point out in this connection that pylorectomy for carcinoma has never been followed in my experience of more than ten years by gastrojejunal ulcers. When an achlorhydria exists, gastrojejunal ulceration is not apt to occur.

The impression has been created that partial gastrectomy in duodenal ulcers presents some form of supersurgery. This impression is absolutely erroneous. This operation is undoubtedly of some magnitude and should not be attempted unless a properly organized hospital staff is available. However, the technical difficulties are not unsurmountable in the majority of cases. The proper dissection of the ulcer from the capsule of the pancreas is not nearly as difficult as it is supposed to be. The postoperative course in most instances is remarkably smooth and uneventful.

I do not present this method as the final word in the treatment of gastric and duodenal ulcers. I am in the dark at present as to the real cause of duodenal ulcers. It is very possible that at some future date the cure of ulcers may be entirely medical. However, the facts must be faced. Medical treatment, as it is given today in the form of different diets and medications, may alleviate the symptoms, but it does not cure the patient permanently.

Among the different surgical procedures, partial or subtotal gastrectomy undoubtedly offers the best chance for permanent cures. I hope that this method will gain in popularity. The material collected from different large clinics during the last seven years has proved the great clinical value of this procedure. A few recurrences have been reported, and have been widely discussed by the adherents of gastro-enterostomy. However, the percentage of cures following resection of the stomach is so vastly superior to the percentage following gastro-enterostomy that this method can now be presented to the surgical profession as a most valuable procedure for the cure of gastroduodenal ulcers.

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15. Lewisohn and Ginzburg (footnote 8).
16. Douglas, J.: The Surgical Treatment of Gastric and Duodenal Ulcers, Surg. Gynec. Obst. 42: 106 (Jan.) 1926.

PARTIAL GASTRECTOMY *

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Therapeutic measures for disorders of any organ of the human body should be based on a knowledge of the physiologic functions of that organ. It is undoubtedly true that there are valuable empiric remedies, but usually further observation has shown that they were originally fortunate guesses and happened to fit in with the correction of a disordered function not understood at that time. A comprehension of disordered function naturally presupposes a knowledge of normal function.

PHYSIOLOGIC CONSIDERATIONS

In the gastro-intestinal tract there are three vital and more or less distinct functions. One is the function of digesting or preparing the food, another is absorption, and the third is the motor function. Grave and continued interference with any one of these functions will result fatally. To some extent the motor function overlaps the other two, because by mixing and churning the food both digestion and absorption are promoted. In the stomach there is little absorption. Alcohol and some drugs are taken up by the gastric mucosa, but it is doubtful whether proteins or carbohydrates are absorbed to any extent in the stomach. The chief gastric functions, then, are digestive and motor, and the digestion is concerned almost entirely with the proteins.

The great majority of gastric disorders that give rise to symptoms are due to a disturbance of motor function, either directly or reflexly. Gastric peristalsis is confined to the right half or two thirds of the stomach, and while it is present the cardiac portion is tonically

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

contracted. The study of peristalsis in the stomach has been illuminated by the work of Cannon, Carlson, Luckhardt, Ivy, Alvarez, Kline and others. In a recent review of the newer physiology of the gastro-intestinal tract, Ivy[1] calls attention to many interesting facts. Thus, he has shown that there undoubtedly is a humoral cause for hunger contraction, as a transplanted gastric pouch without any direct connection with the stomach shows hunger periods as does the unaltered stomach. The intravenous injection of dextrose stops hunger contractions, while insulin tends to increase them. Alvarez has demonstrated that peristaltic waves really begin, not in the middle of the body of the stomach, as formerly supposed and as seen in roentgenologic examination, but on the lesser curvature, particularly in that portion near the esophagus. Ripples of contraction that may be visible to direct observation but are too delicate to be seen by fluoroscopic examination proceed from this point and become more marked about the middle of the stomach, when they are first visible through the fluoroscope. Kline has confirmed these observations and demonstrated a secondary center of contraction at the lesser curvature near the reentrant angle. Ulcers along the greater curvature produce practically no symptoms unless there is hemorrhage or perforation. Cicatricial contraction of the stomach that does not involve the lesser curvature usually does not give symptoms. It has been proved experimentally that the stomach may be divided from the greater curvature almost to the lesser and emptying will be fairly satisfactory, but if it is divided from the lesser curvature the emptying of the stomach is markedly affected.

The influence of the nervous system on the stomach has doubtless been exaggerated, though of course it is important. Hughson[2] has shown experimentally in dogs that there is a distinct delay in emptying the stomach if a traumatic lesion exists in the peritoneal cavity, but that the delay disappears if the vagus nerve is resected just below the diaphragm. This appears to break a reflex arc for pylorospasm.

THE INDICATIONS FOR THE VARIOUS GASTRIC OPERATIONS

There is such a thing as too much standardization. With an organ as complex as the stomach, no one surgical procedure can cover even a large majority of the lesions. It is true that the operation of gastro-enterostomy was formerly much abused, but it is equally true that there is a distinct and large field for gastro-enterostomy. It would be just as unwise to deny a place for amputations in disease of the lower extremity, or to assert, on the other hand, that every lesion of the lower extremity necessitated an amputation, as to say that gastro-enterostomy should be performed for every gastric lesion, or that it should never be performed.

Pyloroplasty has a proper field, and the physiologic pyloroplasty that I have been doing for several years has doubtless a more limited field than the pyloroplasty of Finney. In my judgment, however, there are cases that appear particularly fitted for this physiologic operation.

Partial gastrectomy is becoming increasingly popular. Whether this popularity will be justified by eventual results remains to be seen. However, no one technical procedure should be a standard operation for all ulcers of the stomach or duodenum. Aside from malignant conditions, the proper field for partial gastrectomy cannot be definitely laid down. It depends not only on the character of the lesion but to some extent on the technical choice of the surgeon. One who performs partial gastrectomy skilfully may wisely lean more to this operation than the surgeon who infrequently does a partial gastrectomy and who prefers a gastro-enterostomy or a pyloroplasty. Individual technical ability, then, has a share in the choice of the type of operation. But this dexterity should not tempt one too greatly to perform an operation when there is not a reasonable indication for it.

THE TYPE OF PARTIAL GASTRECTOMY

In partial gastrectomy, it cannot be said that there is any one technic that should always be adopted. There have been numerous modifications of the Billroth I operation, in which the stump of the stomach is sutured to the duodenum, or of the Billroth II method, in which it is united to the jejunum.

The Polya operation done through the transverse mesocolon or the Balfour modification of it, in which the jejunum is brought over the transverse colon, has found many advocates. In the hands of skilful operators, the results are usually excellent. When the end of the stomach is sutured to the side of the jejunum, more stomach can be resected than in the original Billroth II type. The Hofmeister operation, in which the upper portion of the stump of the stomach is closed and the lower end is united to the jejunum as in a posterior gastro-enterostomy, is an excellent procedure.

Naturally, it is best to restore physiologic function if possible, while removing or correcting pathologic conditions. Uniting the stump of the stomach to the duodenum should not be done if the duodenum is markedly diseased or if there are many adhesions to the duodenum. Then, too, there are certain extensive excisions in which the cardiac end of the stump of the stomach cannot be brought over to the duodenum. In such instances, some modification of the Billroth II method, as the Hofmeister operation, is the proper procedure. The objection to the anterior Polya operation is that in bringing up the jejunum there is a possibility of angulation or of later obstruction by the bowel being caught under the attached loop. Then there is the danger of emptying the acid contents of the stomach into the jejunum, which is not by nature prepared to receive acid contents. If a lateral entero-anastomosis is made between the two limbs of the loop of jejunum united to the stomach, the side-switching of the alkaline duodenal contents may to some extent remove the protective influence of alkalinity to that portion of the jejunal mucosa applied to the stump of the stomach. The reflux filling of the blind duodenal stump in all types of the Billroth II operation may be an undesirable complication. In extensive partial gastrectomies in which more than half of the stomach is removed, the emptying of the stomach will not be materially interfered with wherever the anastomosis with the bowel is made, so that the stoma along the greater curvature is not undesirable. This is true because, as has been pointed out, strong peristalsis begins about the middle of the body of the stomach, moving from its point of origin toward the pylorus, with a general axis along the lesser curvature; but while this is going on the cardiac portion of the stomach is tonically contracted like a rubber bag, feeding its contents into the active right half. Consequently, the pressure in the

1. Ivy, A. C.: The Newer Physiology of the Gastro-Intestinal Tract, Am. J. M. Sc. **173**: 453 (April) 1927.
2. Hughson, Walter: Reflex Spasm of the Pylorus and Its Relation to Diseases of the Digestive Organs, Arch Surg. **11**: 136-151 (July) 1925.

cardiac portion may be considered to be about equal in all directions, and gravity here might aid in emptying. When, however, a portion of the stomach is left in which peristalsis occurs, there still will be peristaltic waves, and the focus of these waves is, in general, along the important neuromuscular structures of the lesser curvature. It would seem wise, if the cardiac end of the stomach can be approximated to the duodenum and if the duodenum is healthy, to follow nature's provision and so arange the anastomosis that what is left of the stomach after resection empties into the natural mixing chamber of the acid gastric contents and the alkaline duodenal contents; that is, the doudenum itself.

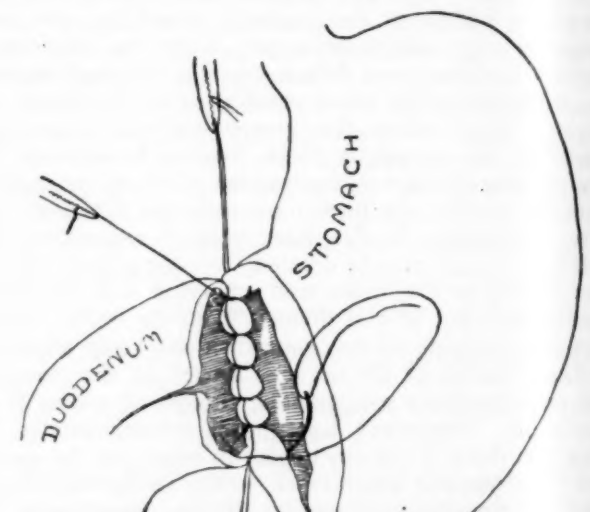
The fact that resection of the stomach is often followed by an absence of hydrochloric acid in the gastric contents does not necessarily mean that all the acid-secreting portion of the stomach has been removed. Normally, after a meal, the sphincter of the pylorus relaxes and some of the duodenal contents regurgitate into the stomach. When there is an ulcer in the pyloric portion of the stomach or in the first part of the duodenum, spasm may prevent this and so indirectly aid in maintaining a high acidity—a kind of vicious circle. When, however, the pylrous is resected, the sphincteric control is either abolished or greatly impaired, and there is free access of the duodenal contents to the stomach contents. In this way, the duodenal contents, whose chief source of alkalinity is the pancreatic juice, may readily flow into the stomach and neutralize the acid that has been secreted. This condition is quite different from the achylia or achlorhydria found in systemic diseases, as in pernicious anemia, because in the latter type of disease the acid-secreting glands of the stomach are impaired, whereas in partial gastrectomy the acid-secreting portion that remains may be normal though reduced in quantity, but the acid itself is readily neutralized by the easily accessible duodenal contents.

A MODIFICATION OF THE BILLROTH I PARTIAL GASTRECTOMY

Since Jan. 1, 1924, I have done a modification of the Billroth I operation that in my hands has been quite satisfactory. There are, of course, some cases in which for reasons already mentioned this operation cannot be performed, chiefly because of lesions of the duodenum. The most frequently urged objection, that the cardiac stump of the stomach cannot be brought over to the duodenum, rarely holds, because, by dividing any constricting bands along the lesser curvature, extensive mobilization of the cardiac end of the stomach can be obtained. This is easier than mobilization of the duodenum, and it probably interferes but little with the function of the gastric stump. Finney has more than once done a total gastrectomy and sutured the stump of the esophagus to the side of the duodenum. Such operations, however, are for linitis plastica in which the stomach has contracted into a small ball, the esophagus has been gradually drawn down, and the duodenum pulled over; so the conditions are not those found without this gradual contraction. It shows, however, the potentialities of uniting the stump of the stomach to the duodenum.

In the original Billroth I operation, the union was made along the greater curvature to the stump of the duodenum. The chief objection to this was that it was difficult to suture the angle safely along the upper border of the duodenum to the stump of the stomach. This was called the "deadly triangle" because of the frequency of leakage. Another objection is that the important lesser curvature is not in line with the duodenum, and thus the motor function of the stomach may be unnecessarily impaired. Still another objection is that in uniting the end of the duodenum to the end of the stomach, a thin-walled viscus is joined to a thick-walled viscus, and as the thin-walled viscus has the smaller diameter, folding in the gastric wall sufficiently to make secure suturing possible might produce occlusion. This has actually occurred in a case of mine.

In a method that I have adopted, a description of which has been published in detail elsewhere,[3] the anastomosis is made with the end of the duodenum to the stump of the stomach along the lesser curvature, as shown in the accompanying illustration. This preserves the proper alinement of the lesser curvature, and it also makes easier the safe suturing of the triangular area, which in this instance is at the lower border of the duodenum instead of at the upper, as in the original Billroth I operation. The lower border of the stomach is more mobile, and can be folded in more accurately. Then the adjacent peritoneal covered fat can be mobilized, and added to the sutures at this point for further reinforcement. Another step, and an important one, consists in splitting the anterior wall of the duodenum for about 1 or 1¼ inches. This is done after the posterior structures have been united, so it will not interfere with the alinement along the upper border of the duodenum. The duodenum is thus flared open, and obstruction at this point is avoided. Not infrequently it can be flared open sufficiently to make possible a complete end-to-end anastomosis if the stump of the stomach is not very large. Folding in of the redundant portion of the gastric stump is not a difficult



The Horsley modification of the Billroth I operation. The main features are that the stump of the stomach is joined to the end of the duodenum, so that the lesser curvature of the stomach will be in alinement with the upper border of the duodenum, and that after the posterior structures are sutured an incision is made in the anterior wall of the duodenum to flare it open. This flaring open is sometimes sufficient to make an end-to-end anastomosis.

3. Horsley, J. S.: Surgery of the Stomach and Small Intestine, New York, D. Appleton & Co., 1926, pp. 211-243; Operative Surgery, St. Louis, C. V. Mosby Company, 1924, pp. 630-633; Partial Gastrectomy, Surg. Gynec. Obst. 44: 214-220 (Feb.) 1927.

procedure, but to make the operation a complete end-to-end anastomosis, as can sometimes be done, is simpler, and is always desirable if other things are equal.

The postoperative convalescence in these cases is usually remarkably smooth. The interns have noted that there is often less trouble after this type of gastrectomy than after any other operation that is done on the stomach, including pyloroplasty and gastroenterostomy. As a rule, I make a practice of washing out the stomach a few times at eight hour intervals after the operation. This is done after all stomach operations. I have never found more than 6 ounces (175 cc.) of gastric contents retained after any of these gastrectomies except in one instance, in which 10 ounces (300 cc.) was removed.

REPORT OF CASES

I have done eighteen of these operations. Eleven have been for ulcer or the late effects of ulcer, one for torsion of the gastrocolic omentum, and six for cancer. All the patients with ulcer recovered, though in one, C. M., a man who weighed 80 pounds (36.3 Kg.) and was very ill at the time of operation, having in addition to a large active duodenal ulcer an abscess in the pyloric wall of the stomach, there were several hemorrhages, the first about ten days after the operation. The patient's weakened condition rendered even a slight hemorrhage critical. Though the hemorrhage was not severe and quickly stopped after lavage of the stomach, he was given a transfusion on account of shock. The bleeding recurred in five days and again four days later. After the third hemorrhage a jejunostomy was done and the patient was fed for a week or ten days through the jejunostomy tube. There was no further hemorrhage.

It is too early yet to report on the end-results in these cases, but so far as I know there is good function in all except the one patient in whom the hemorrhages occurred. He gained 30 pounds (13.6 Kg.) within a few months immediately after the operation, but recently has had some spasm. He is being treated medically, and apparently is improving. In one other case, Mr. G. W. R., an extensive partial gastrectomy was done because of late bleeding following a gastroenterostomy done elsewhere. The patient for about two years after the gastrectomy remained well and free from complaint, but has recently had another small hemorrhage. All the other patients are doing well so far as I know.

In the six patients operated on for cancer, all of whom were men, the ages were 68, 55, 71, 73, 77 and 70, respectively. All these operations were done under local anesthesia. In one case, C. H. M., aged 55, there were adhesions to the pancreas. After these adhesions had been separated there was found on the pancreas a mass which was excised with the cautery, as it was believed to be a cancerous metastasis. However, it proved to be inflammatory, and probably was due to saprophytic bacteria from the large quantities of necrotic cancerous material in the stomach. The excision of the mass on the pancreas opened up inflammatory tissue and the pancreas, with fatal results.

All the other patients made a satisfactory immediate recovery. In the last patient, F. C., the transverse mesocolon and the round ligament of the liver were adherent to the involved portion of the stomach. Aside from several large but movable lymph nodes along the greater curvature of the stomach, there did not appear to be any lymphatic involvement, so the operation was done under local anesthesia according to the usual technic, except that the attachments of the round ligament of the liver to the abdominal wall were freed with the cautery, and this structure, together with the adherent portion of the transverse mesocolon, was removed with the stomach. The removal of the transverse mesocolon necessitated resection of a part of the transverse colon, which was done by the Kerr technic. The patient recovered satisfactorily except for a fecal fistula from the colon that appeared nine days after the operation. He is now doing well. In all these patients, four of them over 70 years of age, the pulse never went above 100 during the operation.

J. J. H., a man, aged 77, was interesting because of the comparatively superficial location of the cancer. Dr. Wright Clarkson of Petersburg made a roentgenologic diagnosis of obstruction and probably cancer of the stomach. Because of the patient's advanced age the operation seemed risky, but the obstruction was almost complete. Operation was undertaken under local anesthesia. There was some thickening about the pyloric end of the stomach but no apparent infiltration, and the peritoneum was normal. This thickening, however, with almost complete pyloric occlusion, made it seem wiser to perform a partial gastrectomy. When the specimen was opened, it was found that there were a few polyps along the pyloric mucosa and projecting into the sphincter, and a superficial ulceration of moth-eaten appearance that extended around the pylorus and well into the gastric mucosa. This did not penetrate the muscular coat, much less reach the peritoneum. Microscopic examination of the polyps and of the ulcer showed a very malignant type of cancer. This case shows that ulcer in an old man seems prone to become cancerous, and it shows, too, that one should not always look for extensive external gastric lesions in order to make a diagnosis of cancer. Grossly, the specimen was soft and looked very unlike cancer, but microscopic examination showed a highly malignant type of cancer which Dr. Broders of the Mayo Clinic reported to be grade 4. So far the patient is doing well, and there is no sign of recurrence. Histologically, the cancer is very malignant, but as it was taken at such an early stage, there is reasonable hope for a permanent cure.

In the patients with cancer who survived, one of them, after having had apparently good health for three or four months, died about nine months after operation, apparently from metastases in the liver and mediastinum. Another patient, aged 73, was well for about five months and then died ten months after operation, apparently from metastases in the liver. A third patient, aged 71, in whom the cancer produced almost complete obstruction at the pyloric end of the stomach, is now living and in good health sixteen months after operation. The other two have been operated on within the last three months and are now well.

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Inadequate Instruction in Public Health.—Is the medical profession equipped at the present time to offer sound, dependable and consistent advice on all the questions of domestic and personal hygiene which may be propounded by those seeking advice? Frankly, I do not see how it can be or could be expected to be. Little attention has been paid to this aspect of medicine in the colleges up to within the most recent years, and hardly anywhere at the present time can the formal instruction in a purely medical course be described as fully adequate.—Draper, W. F.: *Pub. Health Rep.* **42**:2244 (Sept. 9) 1927.

MANAGEMENT OF LESIONS OF THE STOMACH AND DUODENUM COMPLICATED BY HEMORRHAGE*

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The treatment of gastric hemorrhage per se is in some dispute, but there are certain facts which I believe are generally recognized, the most important of which is that death from a single massive hemorrhage from peptic ulcer is rare. Death may result indirectly in such cases because of continuous bleeding or from repeated hemorrhages recurring at short intervals, but with proper management of the case a fatal outcome is also rare. For these reasons the surgical treatment of acute massive gastric hemorrhage, regardless of its cause, is avoided by surgeons because it is attended by a higher mortality than nonsurgical treatment. On the contrary, however, when hemorrhage from a peptic ulcer recurs before the patient has fully recovered from the initial hemorrhage, operation preceded by transfusion should be performed as an emergency procedure for secondary hemorrhage. The majority of surgeons base their treatment of gastric hemorrhage on these principles, Moynihan, Walton, and W. J. Mayo having particularly advocated such practice. Finsterer, however, as a notable representative of the radical school of surgery in peptic ulcer, advocated immediate operation in case of hemorrhage from ulcer, but it is scarcely credible that he carries out such a practice as a routine in the exsanguinated, collapsed patient seen during or immediately after a massive hemorrhage.

DUODENAL ULCER

Duodenal ulcer is the most common cause of hemorrhage from lesions of the stomach and duodenum. Of the 1,072 cases of duodenal ulcer in which operation was performed in the Mayo Clinic during 1921 and 1922, there was a history of proved gross hemorrhage in 184 (18 per cent). The blood was passed exclusively by bowel in 25 per cent of the cases; by vomiting in 27 per cent, and by both in 48 per cent. In half the cases one hemorrhage had occurred, and in the other half two or more; in one case, eighteen distinct hemorrhages were recorded. Long intervals may elapse between hemorrhages; in several cases in the series from fourteen to eighteen years elapsed.

The relation of men and women, as six to one, shows that bleeding is a more frequent complication in men than in women.

The types of duodenal ulcer found in this series of 184 cases were as follows: So far as was determined, 46 per cent were single and on the anterior wall; 18 per cent involved either the superior or the inferior border; 27 per cent were on the posterior wall, and in 9 per cent the exact site could not be determined because of the diffuse character of the inflammatory process. The type of lesion to which the term duodenitis has been applied is frequently associated with hemorrhage, and this lesion is more suggestive of a bacterial origin than the lesion exhibiting a definite crater.

The Relation of Hemorrhage to Other Symptoms.—In 90 per cent of the cases there was a history of duodenal ulcer for an average of nine years before the hemorrhage occurred, and in about 50 per cent symptoms of ulcer had existed for ten years or more. In one case symptoms had been present for more than forty-three years before the first hemorrhage. In 8 per cent, the hemorrhage had been the first symptom to attract the patient's attention seriously. Symptoms immediately preceding the hemorrhage were not suggestive of impending hemorrhage. The frequency with which relief from symptoms has followed a hemorrhage for a variable time is an interesting clinical observation.

The cause of hemorrhage in cases of chronic duodenal ulcer is not always clear, since on the one hand the bleeding may be due to direct erosion of the gastroduodenal or superior pancreatic duodenal artery, or, on the other hand, no gross defect in the mucosa of the duodenum can be found. The former type may be easily explained, but not the latter. An interesting example of the latter group is the condition described as duodenitis; the serosa of the duodenum may exhibit definite and diffuse inflammatory changes, and yet, on excision of the area, gross or microscopic evidence of ulceration cannot be determined. Gross bleeding, however, may have taken place recently. Mann, judging by his observations on experimental ulcers in dogs, believes that actual mucous erosions are responsible for the bleeding in these cases, but the erosions heal with great rapidity and without a residual scar being detectable. The cause of bleeding in chronic ulcer (except when erosion of a vessel in the base had occurred) is usually believed to be from the edges of the ulcer. Mann and Caylor, however, have shown that attempts at healing are made by the development of buds of granulation tissue in the base, and Mann believes that it is the breaking off of these buds with their young blood vessels which gives rise to the bleeding. Strain and trauma may be exciting causes. In some cases, the initial hemorrhage occurred during strenuous exercise, in some, in cranking a car, in a game of golf, or following a blow or heavy pressure on the abdomen.

Diagnosis.—Many difficulties are encountered in the diagnosis and interpretation of observations in these cases. First, it must be established that the hemorrhage is primarily from the stomach or duodenum, and then extrinsic causes should be excluded, although both extrinsic and intrinsic causes may be present in the same case. Hemorrhage occurring in middle aged men in the absence of any history of ulcer is usually due to causes extrinsic to the stomach, particularly in the liver. In approximately 5 per cent, however, of the cases of hemorrhage due to ulcer, the ulcer is the silent type. It is confusing when all clinical signs point to a duodenal ulcer to receive a negative report from a competent roentgenologist. Even more confusing are those cases in which there has been a convincing history of ulcer, or of hemorrhage, and a positive roentgenogram, and yet no ulcer can be demonstrated at operation. This difficulty will be discussed later. The important points in differential diagnosis are that there are other than intrinsic causes for hemorrhage, and that if such causes are established they are not necessarily solely responsible for the bleeding.

To mention the importance of recognizing and dealing with associated lesions is a platitude. A careful search should be made for gastric ulcer, disease of the gallbladder or appendix, splenomegaly, changes in the liver and so forth. Overlooking concomitant disease

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may be the cause of an unexplained failure to obtain complete cure. The question of foci of infection is easily answered by saying that enough evidence of their rôle has been demonstrated to make eradication of all obviously infected foci imperative. Rosenow's investigations into the relation of these foci to hemorrhagic peptic ulcer have shown that acute ulcerations will occur in animals infected with bacteria isolated from foci of patients with hemorrhagic peptic ulcer. Eusterman has reported some extraordinary examples of the control of recurring postoperative hematemesis in certain cases by eradication of infected teeth. In a number of cases he has found that complete control of symptoms, including hemorrhage, has followed the eradication of abscessed teeth, without any other treatment being carried out. In several cases acute tonsillitis, adenitis or arthritis has occurred just prior to the hemorrhage.

Indication for Operation.—It may be safely asserted that duodenal ulcer when complicated by hemorrhage is a surgical condition. Hurst, however, wisely emphasizes the significant fact that a single hemorrhage from an ulcer is rarely fatal. This being true, the advisability of operating should be carefully weighed when hemorrhage has occurred in a patient who, because of age or other factors, is in poor condition for operation. This is especially important when the ulcer has caused but little inconvenience and no disability. Moreover, it should be pointed out to those patients who seek protection against further hemorrhages that no type of operation will give such assurance absolutely. With the highest protection that the surgeon can offer, when complete excision of the lesion has been at least part of the operation, there is no absolute guarantee that hemorrhage will not recur. I believe, however, that the possibility of serious consequences from subsequent hemorrhages in cases in which operation is not performed is greater than the risk of operation and its failure to protect against further hemorrhage. This question is more easily settled because of the fact that the majority of duodenal ulcers seen by the surgeon are chronic, and the symptoms can be permanently relieved with greater certainty by operation than by any other form of treatment.

The purpose of the surgical treatment of duodenal ulcer complicated by hemorrhage is twofold: to relieve the patient of the symptoms of ulcer, and to protect against recurrence of symptoms or of hemorrhage. I have shown in previous articles that the highest degree of protection against subsequent hemorrhage is afforded when a direct operation is performed; that is, when the ulcer or ulcers are removed. An indirect operation alone, however, gives a measure of protection sufficient, so that efforts to remove duodenal ulcer in a difficult situation because it has been complicated by bleeding should not be carried so far as to add materially to the risk of the operation. Patients with marked secondary anemia should be placed in the best possible condition for operation, although anemia, even when severe, is rarely a serious obstacle to the immediate recovery of the patient. If the anemia has existed long enough to injure the hematopoietic system permanently, complete recovery cannot be expected. Transfusions judiciously used before operation and, if necessary, afterward will contribute much to the rapidity and completeness of the recovery of the patient.

Operative Treatment.—Satisfactory excision depends on the accessibility of the lesion, and the extent of the inflammatory process. In 22 per cent of the cases in this series, excision was found possible. There is a steadily increasing tendency toward direct operation in cases of bleeding duodenal ulcer. In cases in which excision was not carried out, it was usually because the lesion was so extensive or the duodenum so deeply situated or so fixed to adjacent structures that local excision was obviously inadvisable. Even in this group, however, sufficient exposure may often be provided to carry a cautery point through the center of the inflammatory area, and deeply placed sutures may be used to close the opening. If this is not possible, the vessels along the superior or inferior borders of the duodenum can be transfixed by suture to advantage. If an anterior lesion is excised, inspection of the posterior wall will so frequently reveal a lesion that this possibility must always be kept in mind. Such posterior ulcers are usually most satisfactorily dealt with by destruction or excision by cautery, and by obliteration of the defect by suture. If the duodenum can be satisfactorily mobilized, partial duodenectomy may be performed. Adequate drainage should be provided following any type of excision, a plastic operation at the pylorus being satisfactory in suitable cases. More often, the duodenum is not in a suitable condition for plastic repair, and the defect following the excision is therefore closed and gastro-enterostomy performed. Partial gastrectomy, as a primary operation for chronic duodenal ulcer, is rarely necessary and should be reserved for recurrence after other types of operation.

In those cases in which all preoperative signs point to ulcer and yet a lesion cannot be found at operation, it is particularly important to make a careful abdominal exploration, especially of those organs which, if diseased, may be responsible for gastric hemorrhage. The duodenum and pyloric end of the stomach should be opened for inspection of the mucosa if the clinician and roentgenologist are convinced of the presence of ulcer. Although one is not likely to find a recognizable lesion of the mucosa at the time of the operation if none can be seen or felt before operation, I have found in a few cases that a reconstruction operation on the pylorus, after an apparently negative examination, has protected the patient against further hemorrhages.

GASTRIC ULCER

Gastric ulcer was complicated by gross gastric hemorrhage in about 20 per cent of this series of cases. Fatal hemorrhage from a gastric ulcer may occur, but it is rarely due to a primary hemorrhage. Blood was vomited in 28 per cent of these cases; in 10 per cent it was passed only by bowel, and in 62 per cent both hematemesis and melena occurred. The age and sex of patients in whom the complication occurred do not differ from the average age and sex of those in whom bleeding did not occur. Symptoms had existed for an average of eight years before the first hemorrhage, and such symptoms were relieved in some cases for a long period after the hemorrhage. Various exciting causes were noted as preceding the hemorrhage, and sufficiently often to establish the influence of such trauma.

The experienced clinician and roentgenologist together can usually determine the presence or absence of gastric ulcer, and if a negative report is given on repeated examination, search at operation for a lesion of the stomach will usually be fruitless.

Indications for operation in cases of gastric ulcer complicated by hemorrhage are more positive than in

cases of duodenal ulcer, and the management is on a definite basis. If a lesion is known to be present in the stomach, even if hemorrhage has not occurred, and there are few symptoms, the fact, as McVicar has pointed out, that three out of four intragastric lesions are malignant should be the basis on which treatment should be advised. To believe that the history, the physical signs or the observations of the case will determine whether or not a gastric ulcer is malignant is to court disaster. The advisability of operation when the case is complicated by hemorrhage should be questioned only when the condition of the patient apparently prohibits such treatment.

In the cases in which bleeding had occurred, the ulcer was on the posterior wall near the lesser curvature, and in an accessible position in 87 per cent. In 5 per cent the ulcer was considered irremovable, usually because of its situation in the fundus of the stomach or because of the extent of attachments or the adjacent infection. The lesions removed varied from 5 by 3 mm. to 8 cm. in diameter.

The size and situation of the lesion largely govern the operative procedure, the age and the condition of the patient being also important factors to be balanced with the effectiveness and simplicity and safety of the operation. A small, unattached ulcer in the upper part of the stomach is much more difficult to deal with than a large attached lesion in the pyloric end of the stomach. Fortunately, lesions in the cardiac portion of the stomach are rare.

The results of these various types of operation show that, so far as control of hemorrhage is concerned, removal of the lesion offers a definitely higher protection against further hemorrhage than an indirect operation, gastro-enterostomy or jejunostomy.

GASTRIC CANCER

Gross hemorrhage from primary gastric cancer is rare; it occurred in 7.5 per cent of the cases in this series. Microscopic hemorrhage is common. Gross hemorrhage per se has no particular surgical significance except the important fact that it suggests a lesion other than cancer. The surgical treatment of cancer of the stomach is directed first to the cure of the disease and secondly to the relief of symptoms. It is the second consideration which is of present interest. The removal of a large ulcerating growth of the stomach at least spares the patient those distressing symptoms incident to such ulceration. Hemorrhage, while rather rare in the early stage of carcinoma, may be most distressing in the later stages, and removal of the lesion at operation, quite aside from the prospect of cure in favorable cases, is a protection against this distressing complication.

BENIGN TUMORS OF THE STOMACH

While benign tumors of the stomach are rare (Eusterman showed that less than 1 per cent of gastric neoplasms are benign) it is exceedingly important that they be recognized as a possible cause of gastric hemorrhage. The benign tumors should be considered carefully because they may be easily overlooked; they may be the cause of unexplained secondary anemia, and they can be dealt with only by surgical means.

Fifty-eight cases of benign tumor of the stomach in which operation was performed in the clinic were classified pathologically as shown in the accompanying table.

In thirteen of the cases the tumors were multiple, and in about 10 per cent there had been a history of gross hemorrhage. In such cases the possibility of a gastric lesion is of first consideration, and fortunately the fluoroscope will not only portray the lesion but in the majority of cases, because of certain distinctive signs, also demonstrate that the lesion is benign. In cases in which there is secondary anemia and symptoms of indigestion are absent, a small benign tumor of the posterior wall may be the sole cause of the continual loss of blood, and may be completely overlooked unless the tumor is detected by fluoroscopic examination. I have observed cases in which secondary anemia had progressed to a point at which a diagnosis of pernicious anemia seemed warranted, and, following the removal of a benign tumor found on fluoroscopic examination, the blood picture returned to normal. In one such case the color index was 1 +; there was numbness of hands and feet, and a diagnosis of early combined sclerosis was made. This patient was given two transfusions, and about six weeks later returned to the clinic much improved. On examination at this time, the lesion of the stomach, which had been shown in the fundus of the stomach at the first examination and was thought to be irremovable carcinoma, was now considered by

Classification of Cases of Benign Tumor

Fibro-adenomatous polyps	14
Adenomas	4
Fibromas, myomas, fibromyomas, adenomyomas and myxofibromas	23
Hemangiomas	4
Polyposis	4
Hypertrophied mucosa	2
Papilloma	1
Dermoid cysts	3
Hypertrophied pyloric muscles	3

the roentgenologist to be benign tumor. At operation I found multiple polyps which could be readily excised, and following their removal all symptoms promptly disappeared and the blood returned to normal. In most cases of the polypoid type of tumor, achlorhydria makes the differentiation of pernicious anemia, gastric carcinoma and benign tumor more difficult. In one case, an enlarged spleen added to the possibility that tumor in the stomach had been overlooked. Any of the pathologic types of benign tumor may be associated with gross hemorrhage, or secondary anemia of varying degree. In one case of an adenoma 6 by 4 by 3 cm., the patient had been treated for pernicious anemia, and the hemoglobin was 27 per cent on examination at the clinic. The tumor was found on roentgenologic examination, and was removed at operation with complete recovery. Hemangioma, of which there were four cases, was always associated with bleeding, in three cases with melena and in the fourth case with severe hematemesis.

The surgical treatment of benign tumors can practically always be carried out satisfactorily. The majority are in the pyloric end of the stomach and can be removed with facility through an incision in the anterior wall. In case of certain large tumors, particularly if malignant degeneration is suspected, partial gastrectomy is preferable. Even if the tumor is in the cardiac end of the stomach, an incision in the anterior wall and traction on the tumor will give access to its attachment to the mucosa, and amputation can readily be carried out. In the fifty-eight cases coming to operation, the tumor or tumors were removed in fifty-seven, exploration only being carried out in one case, that of a polyposis involving the entire stomach.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LEWISOHN, HORSLEY AND BALFOUR

DR. CHARLES H. MAYO, Rochester, Minn.: Dr. Balfour has called attention to the fact that patients rarely die from the bleeding from ulcer, although they may almost bleed to death. In approximately 21 per cent of such cases there may be a history of bleeding, but only one third of these bleed severely. Such patients do not need operation; they are in a condition of shock and anemia. They should .be built up, and tided through the attack. The larger group of patients with hemorrhage will be relieved by a well made gastro-enterostomy. I have had patients who were perfectly well after operation. Patients with hemorrhage have the least trouble between spells. Sometimes seven or eight years will pass without a hemorrhage and most patients do not have a recurrence. Some of the ulcers on the duodenal side are worth watching; however, they are chiefly surgical. Dr. Horsley has brought up an interesting point: the preservation of the lesser curvature. Unfortunately, the ulcers are usually in that region. Shumaker preserves the greater curvature and removes the diseased lesser curvature. In some of these cases, a discussion of the old Rodman operation, which was brought out in 1903, might be revived with profit. The crux of the papers, to my mind, lies in Dr. Lewisohn's report that a high percentage of these patients have trouble after gastro-enterostomy. I am inclined to question this. If a surgeon does have trouble with gastro-enterostomy, perhaps he should be permitted to go to any extreme in order to bring about cure and maintain a low mortality rate. Again, it was stated that surgeons the world over now have a uniform technic. I think the technic for dealing with ulcers of the duodenum and stomach, and pyloric conditions is remarkably varied. When we assume that by resecting and taking out half of the stomach we are destroying the acids and thus aiding the patient with a normal stomach and a small ulcer in the duodenum, we are providing real material for discussion. The "acid line" comes somewhere in the middle third of the stomach. There is no change in the appearance of the stomach to show where that line is. The question is whether resection, subtotal resection, or resection of the lower half of the stomach is going to destroy all the acids. Then, having destroyed all the acids, is ulcer prevented, and will patients without acids after operation be free from later ulcer? Just recently, we had three cases of subtotal resection, with achylia. In all three, marginal ulcers occurred at the point of the anastomosis. If there is a tendency to ulcer, it will occur in the absence of acid. I do not believe that we can lightly throw out the inbred Semitic race. The Jewish people can boast of the cleanest strain of heredity that has been carried through the human race. For 6,000 years, the one strong influence of religion has held them to inbreeding. I am a farmer, at least I am an agriculturist. Progress is not best encouraged by inbreeding. It has been already stated that the Semitic race is now showing changes in the nervous system, and that they are showing changes in the circulation of the lower limbs, as exemplified by Buerger's disease. Some time ago, Joslin showed that at the age of 40 the Semitic race has the same proportion of persons with diabetes as other races, but that at 45 the race has two and a half times as many cases as other races have. The success of surgical measures will thus depend on the inherent tendencies of the patient. If, then, operation must be performed in such cases, it seems to me it should be made to fit the particular case. If you had a duodenal ulcer what would you do? If any man wanted to cut out half of my good stomach in order to cure a little ulcer in my duodenum, I would run faster than he.

DR. GEORGE W. CRILE, Cleveland: In our own cases, after six months the end-results are excellent; after one year, they are still excellent, although, perhaps, not quite so good as at first. But each year after that there are more and more recurrences. So it is not possible, I think, to expect cures in a large series of cases of gastric ulcer from ordinary gastro-jejunostomy. Certainly the midgastric section, as Dr. Horsley said, is not the operative area. Resection there is followed by too many recurrences. It produces contraction of the stomach. The local resections are not curing the disease. The gastric ulcers still recur in too many cases. European surgeons almost everywhere are doing partial gastric resection, and in some clinics they are doing this for duodenal as well as for gastric ulcers, because they are thus cutting down the hydrochloric acid secretion so that their patients are protected against recurrence. I think that I would take much the same position as that advocated by the author, viz., that in the case of an ordinary acute ulcer it is only fair first to place the patient in the medical service for temporary treatment and if, say in two weeks' time, the patient is not distinctly benefited, instead of continuing with medical treatment, to submit him to a surgical operation. As has been stated, the type of operation should be adjusted to the individual case. For many cases some type of plastic operation at the pylorus does very well; for some, gastrojejunostomy is indicated. But I believe that the most satisfactory results—and this is in accord with the opinion of European surgeons—are secured by partial resection. I do not include duodenal ulcers in this statement, because I agree with Dr. Mayo that I should not care to do a gastric resection for duodenal ulcer, unless other treatment had failed, in which case a resection may be indicated. As for gastric ulcer, partial resection is a very fair way in which to deal with it. We do not know now with certainty just what are the real chemical changes in ulcer. We are not in possession of sufficient data concerning the generation and the perpetuation of ulcer. What we now need is a most careful cumulative review of the cases, and very careful studies in order that our knowledge regarding the cause of ulcer may be increased.

DR. FRANK H. LAHEY, Boston: After listening to these papers and this discussion, I wonder what would be the state of mind of an inexperienced young physician seeking light as to the proper plan of handling gastric and duodenal ulcers. I do not know of any situation in surgery which seems so completely mixed up as is the question of gastric and duodenal ulcer. If there is one fact which should stand out clearly at the present time, I believe that it is this: We have been surgical surgeons and medical medical men, and it is time for us in this situation to be medical surgeons and surgical medical men. Today there is certainly doubt and conflict of opinions on this subject. The gastro-enterostomists claim 5 per cent of gastrojejunal ulcers, and the partial gastrectomists claim excessively high gastrojejunal ulcer incidence. The true incidence is probably somewhere between the two. It must be accepted, however, that gastrojejunal ulcer is a serious complication, with its tendency to perforate into the peritoneal cavity and into the transverse colon and to produce a gastrojejunal colic fistula, an extremely difficult and serious lesion to treat surgically. Gastro-enterostomy, on the other hand, is in a large percentage of cases a very good operation. Partial gastrectomy is relatively in the same position today as gastro-enterostomy was ten years ago. How to evolve some plan of procedure which all of us can accept at the present time, I do not know. Until we know more about the etiology of ulcer, we must continue to be uncertain as to its treatments. One outstanding feature concerning this problem, I believe, is that it is the duty of every one who is caring for gastric and duodenal cases today not to assume that medical treatment is to be a failure, but to see that these cases are persistently and adequately treated medically before surgery is considered. There is no question but that there is a definite percentage of both duodenal and gastric ulcers that are relieved medically. I am not a biased advocate of medical treatment, but immediate surgery as the primary and off-hand treatment of gastric and duodenal ulcer is not a defendable position. Our attitude regarding surgery is that in patients who have been operated on and who have had a gastrojejunal ulcer, partial gastrectomy is the best operation to employ, provided the stomach is readily deliverable and the patient is a good risk. In discussing the surgical treatment of peptic ulcer, we would group duodenal and gastric ulcer under the same head, because of the relatively low incidence of the malignant degeneration which we have seen in gastric ulcer. No one

surgical procedure can be employed universally in the treatment of peptic ulcer. In those gastric and duodenal ulcers which have failed under adequate medical treatment, and particularly those in which bleeding has occurred, we would prefer to do partial gastrectomy again, provided the patient is a good risk and the stomach readily deliverable. In those patients who are poorer risks and in whom the mortality of partial gastrectomy would be obviously high, we prefer to accept the uncertainty of gastrojejunal ulcer as a complication and to impress on the patient the necessity of a dietary and medical regimen.

DR. JOHN J. GILBRIDE, Philadelphia: Dr. Frank Billings recently stated that surgeons have not agreed on any form of surgical treatment for gastric ulcer or duodenal ulcer, and that is one of the reasons that a great many medical men hesitate to refer their patients for operation; they hesitate also because of the after-effects or associated conditions following the operation. Dr. Lahey put it pretty well when he said that we should have the medical surgeon and the surgical medical man. Many of the thoughts that I wanted to bring out were covered by Dr. Mayo. How many men here would be willing to undergo a partial gastrectomy if they were suffering from gastric or duodenal ulcer? I know that I would not give my consent to such a procedure, and I would not perform an operation on a patient that I would not have performed on myself. In my opinion, very few patients with peptic ulcer receive the benefit of a course of rigid and thorough medical treatment. It is certainly just as necessary that patients with ulcer should receive skilful postoperative medical treatment. No one method of surgical procedure is applicable to all ulcer cases. Up to the present time, the operation of gastro-enterostomy, combined with modifications to meet the requirements of the individual patient, have proved the most satisfactory operation. The removal of the acid-bearing area of the stomach is irrational, as we know comparatively little, if anything, of the effects of such removal. The number of patients on whom a partial gastrectomy appears necessary is small. Therefore, partial gastrectomy, as a routine procedure for the treatment of gastric and duodenal ulcer, is to be condemned. It is unphysiologic and unsurgical.

DR. E. R. ARN, Dayton, Ohio: We have studied 200 cases in which gastro-enterostomy had been performed for some lesion in the duodenum. The first thing we tried to find out was why the patients returned. They returned for three reasons: a recurrence or a persistence of their former symptoms; hemorrhage, and perforation. I do not believe that we can attribute the hemorrhage and the perforation to the question of pensions. We might be able, as we have been told, to accuse those patients who return for persistence of symptoms or recurrence on this score. What was the result of an exploratory operation in patients? Let it be said to the credit of surgery that in 90 per cent of the cases we were able to visualize a lesion in the duodenum, and that lesion was either the scar of the healed ulcer, or an active ulcer. These patients were not always operated on by military surgeons, as we have been accused of lack of experience, but they were operated on by surgeons all over this country, and they had been sent to the hospital by the Veterans' Bureau. In 5 per cent of these patients, lesions were not demonstrable in the duodenum. In another 5 per cent we were able to find a marginal ulcer at the site of the gastro-enterostomy. As far as we were able to determine, the gastro-enterostomies were well performed. We were not able to elicit a history of a prolonged medical course of treatment in any of these cases of duodenal ulcer. To me, that is the most important part of this whole subject of duodenal ulcer. I am sure that I would hesitate to let any surgeon perform a gastro-enterostomy on me, or a resection, for that matter, until I had had adequately medical treatment. Secondly, we found that in the patient who had an obstruction at the pylorus, this obstruction being produced by the ulcer, the results from gastro-enterostomy were excellent; but in the cases in which the lesion was small, one that should have been excised, the results from gastro-enterostomy were poor.

DR. RICHARD LEWISOHN, New York: We do not remove a normal stomach when we perform a partial gastrectomy for duodenal ulcer. The distal half of the stomach in practically every case shows a very marked gastritis, as Konjetzny has shown. We remove the diseased part of the stomach when we do a partial or subtotal gastrectomy in gastroduodenal ulcers. All our patients receive medical treatment before they come to us. They do not come to a surgeon immediately. They go from physician to physician and try to get medical treatment, and only if medical treatment fails do they go to the surgeon. I have always felt that if we had a real good medical cure for gastric and duodenal ulcers, no surgery would be performed for this condition.

DR. J. SHELTON HORSLEY, Richmond, Va.: Dr. Crile and Dr. Lahey have summed up the situation well in commending medical treatment in practically all cases of peptic ulcer whether operation is indicated or not. If the peptic ulcer has not existed for a long time, and particularly if it is in the duodenum, and if the symptoms are not marked, medical treatment is all that is necessary. No operation or "setting" is indicated. If, however, the ulcer is of long standing, is complicated by hemorrhage, excessive pain, obstruction or perforation, or if the ulcer is in the stomach where there is a marked tendency toward malignant degeneration, and it does not tend to heal after medical treatment has been tried for two or three months, operation should be done. The discussion as to whether an ulcer should be treated medically or surgically is illogical. Each ulcer should be treated according to the indications for that particular ulcer, but it does not seem wise to continue the medical treatment for years in order to obtain a cure. It must be recalled that there is a tendency for gastric peptic ulcers to develop cancer. Every one who has observed the pathologic manifestations of peptic ulcer carefully acknowledges this. Gastro-enterostomy has a very definite field, and when it is distinctly indicated, it gives excellent results. To do it for every lesion of the stomach or duodenum, however, is just as illogical as to do an amputation at the knee for every lesion of the foot. If there is a large duodenal ulcer or if there is obstruction of the duodenum, gastro-enterostomy, preferably without clamps, gives good results. In addition to gastro-enterostomy, I occlude the pylorus by applying a stout kangaroo tendon, tying it just tightly enough to produce occlusion without necrosis. In this way the occlusion lasts longer than if the ligature is tied too tightly. There seems to be no indication for delaying operation after bleeding in order for the patient to gain strength. This formerly was necessary before transfusion came into general use. Now, the patient's blood can be replaced by transfusion in half an hour, and operation may be performed at once without the danger of a recurrence of the hemorrhage and the anxiety of unnecessary waiting to build up the patient's blood and strength.

DR. DONALD C. BALFOUR, Rochester, Minn.: I should like to emphasize very strongly Dr. Lahey's statement that one of the faults in the surgical management of duodenal ulcer has been in operating too early, and bad results have been confined to these cases. In the Mayo Clinic, we operate in 45 per cent of the cases of duodenal ulcers, and in these cases the average period of the duration of duodenal ulcer has been ten years. It is obvious, therefore, that we are careful in selecting the patients. Eighty-five per cent of the patients had gastro-enterostomies performed; the remainder had some type of pyloroplasty. Probably 5 per cent of the patients so operated on will develop recurring ulcers in some part of the stomach or duodenum or jejunum. If there is one principle to emphasize in connection with the surgery of duodenal ulcer, it is moderation. I recently asked one of our students who had returned from Europe where he had been visiting on a traveling fellowship what was being done by surgeons in Europe for duodenal ulcer. He said that a great many of them were doing partial gastrectomy but that one man was doing gastro-enterostomy as a routine. He found out afterward that this surgeon had a duodenal ulcer himself.

TULAREMIC PERITONITIS

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There have never been any reports of abdominal complications in tularemia. The spleen, liver and suprarenals seem to bear the brunt of the localized abdominal pathologic changes in this disease, as shown by areas of focal necrosis of the miliary type. This is especially true in infected wild rodents, in which extensive study has been done by Francis and his co-workers during the past fifteen years.

In man, however, there has not been ample opportunity to make a thorough pathologic study because of the very low human mortality in tularemia. The examination of the abdominal organs of one patient who died five months after contracting tularemia showed pathologic changes not unlike those of chronic granulomas in the spleen, liver, lungs and suprarenals.

The case reported here apparently was an ordinary attack of tularemia until abdominal complications arose three months after the initial infection. The abdominal condition, which resembled that of a low grade peritonitis with ascites and gaseous distention, aroused our interest in the case and prompted us to work out what is apparently a new clinical manifestation of a new human disease—tularemia.

REPORT OF CASE

History.—J. M. H., a man, aged 40, white, married, superintendent of a button factory, admitted to St. Vincent's Infirmary for diagnosis, March 21, 1927, complained of swelling of the abdomen. He had enjoyed good health all his life, and his antecedents had been free of all constitutional diseases. Dec. 18, 1926, he dressed three cottontail rabbits which he had killed while hunting. Three days later he became suddenly ill with high fever (105 F.), general aches and pains, nausea and prostration. The same day an ulcer developed on the inner surface of the right ring finger. The next day the lymph nodes draining the ulcer region were enlarged and very painful. These glands were arranged in a row up the right arm and varied in size from that of a pea below to that of a hen's egg at the elbow and in the axilla. The fever, adenopathy and ulcer persisted for three weeks. There was no suppuration except at the site of the finger lesion. Finally the ulcer healed, the fever subsided and the glands became less painful although remaining enlarged. The patient returned to his work, where he remained till about the first of March, 1927. During his illness he had lost 15 pounds (7 Kg.), but he had regained 5 pounds (2.3 Kg.) at this time.

He now noticed that the abdomen was swollen and somewhat tender. At the same time there was a little fever in the afternoon. The abdomen gradually increased in size so that at the time of admission he could hardly button his trousers about his waist. The daily elevation of temperature had persisted. Occasionally there was considerable discomfort from the abdominal distention, but a purge always relieved this and on the whole he suffered very little. There was no other gastrointestinal disturbance at the time and his appetite was good. There were no respiratory symptoms.

Physical Examination.—The patient was well developed and fairly well nourished. The pulse was 102; temperature, 101.2 F.; respiration, 20; blood pressure, 110 systolic and 70 diastolic.

The right ring finger, palmar surface, showed the scar of a recently healed ulcer about one-fourth inch wide. There was a chain of enlarged lymph glands along the extensor surface of the right forearm which terminated in a much larger gland on the inner side of the right elbow and in the right axilla. The epitrochlear was soft, the axillary hard, and both were painless. No other adenopathy was found.

The heart was not enlarged; the rate was 102; there was no arrhythmia. There was a systolic murmur at the apex transmitted upward and to the left. The lungs were entirely normal on physical examination.

The abdomen was moderately distended and regular in contour. The superficial veins in the lower quadrants were prominent. It was estimated that about half a gallon of free fluid was in the abdominal cavity. There was no tenderness anywhere. The liver was moderately enlarged, the spleen not felt. No other organs or masses could be palpated. The remainder of the physical examination was entirely negative.

Laboratory Examination.—The Wassermann reaction was negative. A roentgenogram of the chest was negative. The urine was normal. Blood examination revealed: total red count, 4,500,000; hemoglobin, 80 per cent; no pathologic red cells; no malarial parasites; leukocytes, 7,000, of which 72 per cent were polymorphonuclear neutrophils, 24 per cent small mononuclears and 4 per cent large mononuclears.

The bacteriologic work was started, March 22. About 1 cc. of pus from the abscess of the right epitrochlear lymph gland was injected into the inguinal region of guinea-pig 1. This animal remained perfectly well.

An agglutination test was made of the blood serum of the patient, March 23. The serum was found to agglutinate *Bacterium tularense* in a dilution of 1:640. The patient also produced a report of a positive agglutination test from the Hygienic Laboratory, Washington, D. C.

Knowing that the patient had tularemia, we undertook to determine whether the ascites was the result of the same infection. About 20 cc. of greenish tinged cloudy ascitic fluid was withdrawn, March 24. Cultures on ordinary mediums and smears from the ascitic fluid failed to show the presence of organisms. The fluid was centrifugalized; the sediment was mixed with about 5 cc. of physiologic sodium chloride solution and injected in the inguinal region of guinea-pig 2. The animal died in four days, showing lesions of tularemia. A portion of the spleen was rubbed on the shaved abdomen of guinea-pig 3. After the death of pig 2, another specimen was obtained from the patient and a portion injected into pig 4. This animal died in four days, showing typical lesions of tularemia.

We then set out to isolate the organism. This problem was attempted after considerable hesitancy on account of the danger of infection to laboratory workers. The strain was carried through a long series of animals before the organism was obtained, the spleen of the infected animal being rubbed on the shaved abdomen of the healthy pig. The spleen was used for culture in each instance. In our first attempts the animals were allowed to die and in some cases the animals had been dead several hours before the cultures were made. The organism should grow well on egg yolk medium, but we were unsuccessful with this, our failure probably being due to improper facilities for sterilization. We also tried human blood agar and rabbit blood agar enriched with sterile rabbit liver without results. We then prepared a medium of meat infusion agar containing 0.1 per cent cystine and 1 per cent dextrose enriched with rabbit's blood, the reaction being carefully adjusted by means of buffer solutions to a p_H of 7.3. With this medium we obtained the organism from pig 13, being the ninth animal passage. A greenish smeary growth first appeared on this medium in three days. A luxuriant growth was obtained on transfer tubes in from twenty-four to forty-eight hours. No growth was obtained on plain agar, and very little growth on dextrose cystine agar. On staining, the organism appeared as a short gram negative rod and coccus forms. The organism was agglutinated by antitularense serum in a dilution of 1:320. Three guinea-pigs were killed within three days following injection of the culture. A fourth pig, killed four days after the shaved abdomen had been painted with the culture, showed very typical lesions, enlarged caseous lymph glands, and multiple white foci of necrosis in the spleen and liver.

The organism was submitted to the Hygienic Laboratory, which reported that the culture conformed in all respects to *Bacterium tularense*. It was correct morphologically, was gram negative, was agglutinated by antitularense serum, and grew only on special medium and not on plain agar. It killed a guinea-pig in three days with typical lesions of tularemia.

Portions of the spleens and livers from most of the animals were submitted to the Hygienic Laboratory. It is interesting

to note that the first tissues sent had no effect on guinea-pigs. The livers and spleens were sent in glycerin in the same container. They failed to introduce the strain in the guinea-pigs until a specimen of the spleen by itself was received. Dr. Francis in a recent communication informed us that the organism is short lived in the liver and that the spleen should be used in transporting the strain.

The strain was carried through eighteen animals during a period of two months. All the animals were examined post mortem and cultures of the organs were made. None of the laboratory personnel contracted the disease. This is rather unusual, as practically all laboratory workers who have handled infected animals for any length of time have had tularemia. Great care was exercised. The animals were dipped in 10 per cent solution of formaldehyde before autopsy. Gowns, masks, glasses and gloves were worn. All infected tissue was handled with tissue forceps. All instruments and materials used were sterilized immediately.

The patient was discharged from the hospital, March 30, 1927, to be kept under observation at his home. All his symptoms gradually subsided during the three months after his discharge and he is now able to be up part of the time. The abdomen still shows some distention, but no additional complications have arisen. His treatments have been entirely symptomatic throughout his illness.

CONCLUSIONS

1. *Bacterium tularense* may cause peritonitis and it may be isolated from ascitic fluid. This is the first time it has been isolated from such fluid.
2. It is possible for laboratory workers to handle animals infected with *Bacterium tularense* in safety if great care is exercised.
3. When the strain is transported, the spleen should be sent in a container by itself.
4. The organism grew best for us on glucose cystine meat infusion agar, of p_H 7.3. This formula is recommended by Dr. Francis.

THE MANAGEMENT OF MEASLES IN HOSPITAL AND HOME*

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In the management of measles one may have to deal with (1) the prevention or modification of a threatened attack in exposed, susceptible patients; (2) the treatment of developed, uncomplicated cases and the utmost prevention of complications, or (3) the treatment of established complications. The angle of approach differs somewhat in (*a*) a contagious disease hospital; (*b*) a general hospital, especially the pediatric wards, and (*c*) a home.

The problem of handling exposed susceptible patients arises mainly in the general hospital and the home. I may go a step farther back and speak for a moment of the prevention of exposure. This matter is of great importance in the age group under 5 years. The great mortality of measles lies here (tables 1 and 2).

PREVENTION OF EXPOSURE

There is little hope of preventing exposure in the great majority of homes for some time to come; the "danger group," as I shall term those under 5 years, will continue to acquire measles and affect mortality statistics. But physicians must not neglect teaching the families of their patients how and why they must protect these children.

More can be said for the general hospital. Here the guard at the gates can be strengthened in the following ways: 1. Admitting physicians should know contagious diseases well enough to turn back, refer elsewhere, or isolate the suspected child or adult seeking admission. 2. The resident or intern staff should at all times include members on duty who have had the contagious disease experience which can be secured in contagious disease hospitals. They should be assigned to police the children's wards for contagion. 3. The aseptic technic should be applied in one form or another to every pediatric service, at least long enough to be reasonably sure that patients will arrive in the general ward without contagion. Individual or small group isolation of the "danger group" for three weeks from admission would (1) protect the pediatric service from closure, which robs many sick children of the immediate care they deserve; (2) protect those children already admitted from unnecessary and undue exposure to secondary infections of all kinds, and (3) make possible the restriction of such outbreaks as occur.

Such an arrangement will necessitate thorough training of the nursing, house and attending staffs in the details of the technic. It will require head nurses who have knowledge of the technic, personality, and full authority to deal summarily with any and all who break the rules. To install the technic successfully requires above all else the utmost cooperation of all concerned. The burying of many notions will be the hardest to secure.

TABLE 1.—*Infant Mortality in Measles*

Sources	Cases and Deaths		Percentage of Total Mortality
Willard Parker Hospital, 1919-1923..	Total cases of measles,	3,720	
	Total measles deaths,	583	
	Deaths under 3 years,	428	73.41
	Deaths under 5 years,	533	91.42
U. S., unstated, 1918-1922.....	Total measles deaths,	2,886	
	Deaths under 5 years,	2,698	93.5
Pfaundler, Munich (cited by Degkwitz)	Total measles deaths,	673	
	Deaths under 6 years,	582	86.5
Reder, Germany (cited by Degkwitz)	Total measles deaths,	2,772	
	Deaths under 6 years,	2,525	91.1

TABLE 2.—*Measles Deaths by Age Groups at Willard Parker Hospital, 1926*

	Total Cases	Total Deaths	Mortality, per Cent
First six months.....	32	8	25.0
Second six months.....	111	21	18.9
Second year.....	356	65	18.2
Third year.....	157	13	8.2
Fourth year.....	96	44	4.1
Fifth year.....	78	3	3.8
Six to ten years.....	130	1	0.7
Over ten years.....	138	0	0.0
Total.....	1,098	115	
Three years and under.....	656 (59.7%)	107 (93.04%)	
Five years and under.....	830 (75.6%)	114 (99.13%)	

TREATMENT

The prevention or modification of a threatened attack in a susceptible contact lies mainly in administering convalescent, parental or other adult serum. Adult convalescent serum which has been pooled has given the best results. This method is of great value to the "danger group." Older children may well be given a modifying dose. The Degkwitz [1] sheep serum is as yet

* Read before the New York Academy of Medicine, March 17, 1927.

1. Degkwitz, R.: Serum Prophylaxis in Measles, Deutsche med. Wchnschr. **48**: 26 (Jan. 5) 1922.

in the experimental stage. The collective experience which I have been able to gather from literature on the subject is presented in table 3, together with the apparent duration of the passive immunity bestowed by the serum as stated by various workers.

However, these results are rather optimistic as compared with the table of results published by Salomon [2] (table 4) and with unpublished experience personally known to me.

TABLE 3.—*Massed Experience with Measles Convalescent Serum as Reported in the Literature*

Total patients inoculated before eighth day	3,721
Total completely protected	3,237
Total modified measles	434
Total unmodified measles	50
Total patients inoculated eighth day or after	20
Total modified measles	13
Total unmodified measles	7

Apparent Duration of Immunity Following Measles Convalescent Serum

Zingher (J. A. M. A. **82**: 1180 [April 12] 1924).....5 to 6 weeks
McNeal (J. A. M. A. **78**: 340 [Feb. 4] 1922).....some not over 60 days
Ratnoff (Arch. Pediat. **40**: 668 [Oct.] 1923).....some only 2½ months
Degkwitz (Deutsche med. Wchnschr. **48**: 26 [Jan. 5] 1922)...earliest 33 days

The usual doses advised to secure protection are given in table 5. My impression is that these are minimal doses, and that if protection is really sought they had better be doubled.

It should be remembered that the measles rash appears four days after coryza, etc., begin. When adult unpooled serum is used, serum or plasma from

TABLE 4.—*One Hundred and Ninety-Eight Infants More Than Three Months Old in Hospitals, Exposed to Measles* *

No. of Cases	Serum Given	Percentage "Takes"	No. of Deaths	Percentage Deaths
60	No	100.0	35	58.3
62	Yes, convalescent†	40.3	4	16.0
76	Yes, adult (10-15 cc.)	47.4	5	13.8

* To forty-two infants under 3 months of age serum was not given, with the result that there were fourteen "takes," all mild, and no deaths.
† From convalescent infants.

30 to 60 cc. of blood should be given to those under 5 years; this should be doubled for children from 5 to 10 years, and for those over 10 years the dose must be greatly increased.

The modified measles cases are characterized by relatively slight and brief fever, absent, slight or atypical

TABLE 5.—*Protective Dosage of Measles Convalescent Serum*

		Time Since Exposure
Infant under 5 years.....	2.5 cc.	Not over 4 days
	5-6 cc.	Not over 5-6 days
	10 cc.	Not over 7 days (60% protected)

rash, slight or absent catarrh, few or no Koplik spots, and an onset of symptoms which is frequently advanced or retarded as compared with the usual time. Zingher [3] and Degkwitz have shown that persons protected late after exposure—from the sixth to the seventh day—seem to develop some active immunity in addition to the passive type. Frequent reinoculation will be necessary in persons repeatedly exposed. Degkwitz reports that only mild or modified attacks occurred in infants reexposed but not reinoculated about the time passive immunity had run out.

The treatment of uncomplicated cases in the well managed, clean home with a fair income is generally easy. Mixsell [4] collected 300 histories of private cases, and noted only twenty-five histories of pneumonia with one death. Measles mortality in childhood is chiefly due to crowding with many and close contacts, and lack of proper food, sunlight, cleanliness, fresh air and early and proper medical attention. It is the undernourished, underdeveloped, rachitic, tuberculous or syphilitic child that succumbs first. Godfrey [5] has shown that children under 3 years of age constituted 18 per cent of all measles cases but 83 per cent of measles deaths in places of from 50,000 to 200,000 population in New York State. In places of 2,500 or less, they contributed 11 per cent of all measles cases and 61 per cent of measles deaths. Lack of crowding and its attendant unfavorable factors tends to put off the day of infection until the child reaches a safer age. Thus, Rosenfeld [6] reporting from Vienna and Reich [6]

TABLE 6.—*Analysis of Bronchopneumonia Cases, Willard Parker Hospital, 1926*

Disease	Total Cases	Number Bronchopneumonia	Percentage of Incidence	Pneumonia Before Admission: Cases	Deaths	Per Cent	Pneumonia After Admission: Cases	Deaths	Per Cent
Scarlet fever...	384	11	2.8	5	3	60	6	3	50
Diphtheria.....	1,142	58	5.0	43	26	60	15	12	80
Measles.....	1,698	219	22.6	194	87	44.8	55	17	30.9

Total measles deaths, 115; total measles bronchopneumonia deaths, 104.

from Hamburg, for periods of ten years, state the mortality among children of the poor, most of whom were under 3 years of age, as 10.99 per cent and 6.4 per cent, respectively. Among the children of the rich, in whom the age at death was usually above 3 years, the mortality figures were 0.55 per cent in both cases. The physician's problem when visiting a patient is not limited to diagnosis; he must decide whether the surroundings are or are not as conducive to recovery as they would be in a good hospital.

In the care of the child having measles, the great essentials are rest, warmth, plenty of air and light, good food and good nursing. Here is the advantage of the good hospital over the poor, unhygienic home.

POSSIBLE COMPLICATIONS

The sole excuse for aseptic technic is the prevention of cross or secondary infections. Among secondary infections, those of the nasopharynx, larynx, bronchi and lungs are the most important. The streptococcus, pneumococcus, influenza virus, the diphtheria organism and possibly others play a rôle varying with the epidemic and the locality. All persons with active nose and throat infections should be barred from the sick-room. When there is more than one case of measles in the same family, the patients should be placed in separate rooms whenever possible and should never

2. Salomon, G.: The Prophylactic Use of Normal Serum Against Measles, Deutsche med. Wchnschr. **49**: 1151 (Aug. 31) 1923.
3. Zingher, Abraham: Convalescent Whole Blood, Plasma and Serum in the Prophylaxis of Measles, J. A. M. A. **82**: 1180 (April 12) 1924.
4. Mixsell, H. R., and Giddings, E.: Report of 3,080 Cases of Measles with Special Reference to Pneumonia Complications, South. M. J. **16**: 90 (Feb.) 1923.
5. Godfrey, E. S., Jr.: Administrative Control of Measles Mortality, Am. J. Pub. Health **16**: 571 (June) 1926.
6. Cited by Degkwitz (footnote 1).

sleep in the same bed. Physicians should clearly point out to parents, especially mothers and nurses, the grave danger to the measly child of sleeping with it. The importance of respiratory infections is clearly shown by the greatly increased mortality among measles patients at the height of the respiratory disease season (table 7).

McNabb[7] and others have presented statistics from army and other experience tending to show that crowding increases the number of positive throat cultures for pneumococcus and streptococcus. A perceptible increase was noted in routine cultures taken every five to seven days. These figures seem to show fewer complications among those with primary positive cultures than in the "so-called secondarily infected." Possibly this is working on a false premise, for other work seems to show primary positives in much higher percentages if tonsillar crypt, rather than surface, cultures are taken. Perhaps the active measles catarrh brings more organisms to the surface. However, still other work under aseptic technic seems to show greatly reduced secondary positive cultures.

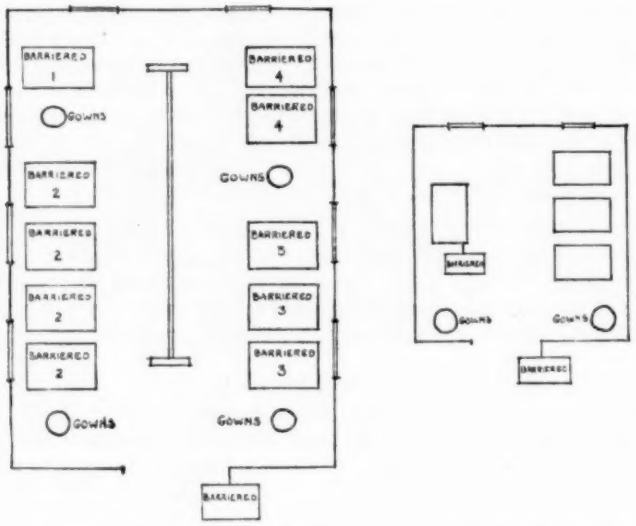

Fig. 1.—Barriered rooms, large and small. A printed sign or card "barriered" on the door indicates that more than one unit exists within the room. The beds in these units are marked by cards with "barriered" and a number which shows to which unit the bed belongs. In the small room, three beds have no card (one unit), a fourth bed a "barriered" card (another unit).

TABLE 7.—*Analysis of Measles Deaths, Monthly Record, Willard Parker Hospital* *

Month	1922 W.	1922 A.	1923 W.	1923 A.	1924 W.	1924 A.	1925 W.	1925 A.	1926 W.	1926 A.
January	35	3	—	2	2	5	—	—	1	6
February	1	25	2	3	5	14	—	—	4	17
March	5	45	—	3	5	20	—	—	8	23
April	5	51	1	8	5	20	2	8	4	21
May	6	39	7	12	1	13	2	9	4	13
June	2	31	3	11	—	11	1	5	4	6
July	2	6	—	4	—	—	2	2	—	2
August	—	—	1	2	—	1	—	2	1	1
September	—	—	—	—	—	—	1	3	—	—
October	—	1	—	1	—	—	—	—	—	—
November	—	1	—	4	—	—	—	3	—	—
December	2	—	1	9	—	—	—	1	—	1
Total	58	202	15	59	18	84	8	33	26	89

* In this table, W signifies within forty-eight hours; A, after forty eight hours.

Bronchopneumonia and otitis and their complications depend very much on the state of the nasopharynx. Local measures have a great value in treatment but none so great as the prevention of catarrh by measles convalescent serum.

Plenty of light does no harm and helps greatly. Light need not strike directly into the eyes.

Convalescent serum has been used in developed cases, but the results obtained are not conclusive enough to be presented at this time.

In the general hospital the points that I have brought out apply with doubled force because of the greater numbers of possible contacts. These points may be recounted as follows:

1. Immediately isolate all developed measles cases.
2. Watch for rises of temperature in susceptible contacts and isolate at once. Coryza and Koplik spots come too late.[8]
3. Inoculate all susceptibles possible with convalescent, parental or other adult serum. Save the convalescent serum for the "danger group," especially those under 3 years, and particularly the marantic, rachitic and tuberculous children.
4. Discharge all possible convalescent children with past positive measles histories in order to simplify ward problems.
5. Establish aseptic technic, especially if isolation of developed and suspected cases is impossible.
6. Take every step to prevent secondary infections. Bar nurses, physicians and other necessary contacts with active nasopharyngeal symptoms. Take cultures of the throats of the ward personnel, and eliminate pneumococcus, streptococcus and diphtheria carriers.
7. For the patients provide rest, warmth, fresh air and light, good food and good nursing.

For the contagious disease hospital I need not add much to what has been said except for some brief remarks regarding complications and the isolation that is secured by means of the aseptic technic. Rest, warmth, fresh air and light, good food and good nursing are as important here as elsewhere. Plenty of air space is essential; from 100 to 200 square feet per patient should be supplied. Wards should be kept at from 65 to 70 F., and well ventilated, without having strong cross drafts because of their interference with the aseptic technic. Attending and resident physicians should be well versed in the problem of feeding infants. An adequate nursing staff must be provided, which can carry out the aseptic technic carefully and yet have ample time to do good nursing. When experienced in

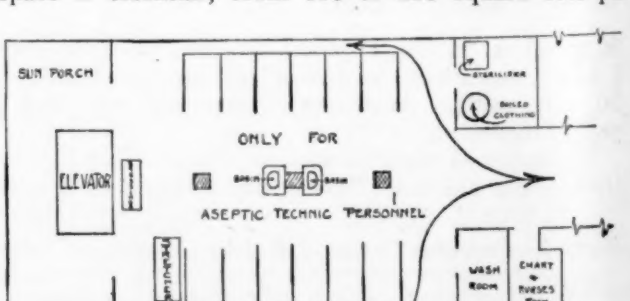

Fig. 2.—A cubicle ward showing elevator for incoming patients; stretcher and instrument table for admission examination; cubicles; basins for scrubbing; sterilizer room and area where parents and visitors are admitted (this area separated from the cubicles by glass partitions).

7. McNabb, P. E.: Postmeasles Pneumonia, Mil. Surgeon **51**: 313 (Sept.) 1922.

8. Stimson, P. M.: Certain Aspects of Measles, Arch. Pediat. **39**: 11 (Jan.) 1922.

the technic, the nursing staff need be only moderately increased over the usual size. Each nurse should be assigned, as far as possible, to a definite group of children. This reduces contacts. Despite the theory of aseptic technic, it is better in practice to separate positive streptococcus or pneumococcus carriers from each other and from noncarriers. Likewise, pneumonia cases are best segregated, and this possibly applies as well to otitis cases. Diphtheria carriers and active cases must be especially watched for.

Fig. 3.—A cubicle ward, Willard Parker Hospital: Basin for scrubbing, in corner; gowns are hung in special manner in each cubicle.

An admission ward from which cases can be transferred to their proper wards as soon as classified can well be maintained. Here, individual isolation under aseptic technic must be carried out with absolute precision.

Such complications as bronchopneumonias, in our experience at Willard Parker Hospital, have done best in warm air (from 65 to 70 F.). In our hands the cold air method has given a high mortality. Digitalis has seemed to be a distinct aid in bronchopneumonia. Empyemas must be watched for with great care. They are easily missed. Flatness or apparent massive consolidation appearing rather suddenly is very suggestive, and the needle is the best diagnostic aid. Radical treatment is almost surely fatal. We have practiced withdrawing small amounts of pus and replacing with an equal volume of air. Surgical treatment is best delayed until adhesions and frank, thick pus have formed. Catarrhal laryngitis should never be intubated except by an expert and that rarely. It is almost a 100 per cent fatal procedure. Tracheotomy is almost as fatal a method of treatment. When diphtheria is suspected, the expert can safely take a culture by direct laryngoscopy. Otherwise, when in doubt, it is best to give diphtheria antitoxin and wait. Constant oral and ocular cleansing is very important.

ASEPTIC TECHNIC

The aseptic technic apparently began with Grancher some thirty-five years ago. He employed cubicles. The whole purpose of this method is to prevent secondary infections. Two principles are involved: (1) the prevention of droplet infection of patient by patient, and (2) the prevention of the transfer of infectious material from patient to patient by means of the hands, clothing, instruments and utensils of physicians, nurses and ward attendants. Cubicles or sufficient air space between beds covers the first requirement; the aseptic technic accomplishes the latter. Confining the patient to a restricted area which is contaminated by himself alone completes the system.

Two principal physical methods are used in applying the aseptic technic. For convenience we may speak of these as the barrier method as used at Providence, R. I., and the cubicle (or box or room) method as used at the Willard Parker Hospital. It is impossible to cover these methods here in any detail. Suffice it to say that it is surgical asepsis which underlies both. The barrier method employs groups, units of from one to four patients, more than cubicles, in which individual isolation is the rule. The latter is much more laborious.

The fundamental rules of aseptic technic may be summarized as follows: 1. Isolated patients are confined to their cubicles, or areas, until they may safely mingle with patients of their own classification. 2. A gown is kept in each cubicle or at the bedside of each barriered bed or group of beds which must be worn by every person who enters the space, except when there is no active contact with the patient or his bed. 3. Individual articles, such as thermometers, wash cloths, basins, towels and glasses, are kept in each cubicle for the sole use of its occupant. 4. All eating utensils must be sterilized by an adequate method immediately after use. 5. Bed pans and urinals are first washed out and then sterilized by steam, boiling water, or disinfectant immediately after using. 6. Water taps and basins are frequently washed with compound solution of cresol. 7. Medicine glasses, all instruments, stethoscopes, hot water bags and ice bags must be sterilized by an appropriate method. 8. Any person handling patients must scrub with soap and water, or wash his hands in compound solution of cresol after touching a patient or any article that has come in contact with him.

Fig. 4.—Detail of cubicle, Willard Parker Hospital: glass on three sides; visitors' passageway just beyond back partition; patient's tag and ward card at foot of each bed.

The aseptic technic was established in the measles pavilion of the Willard Parker Hospital in temporary fashion in 1924. In December, 1925, the permanent cubicled wards for measles were first occupied. A study of the measles statistics of the Willard Parker

Hospital from 1919 to 1926, inclusive, compared with those of the borough of Manhattan which it serves, provides one method of estimating the value of the technic. The cross infection record of the hospital for several years affords another check. Other interesting

TABLE 8.—*Measles Mortality Before and After Institution of Aseptic Technic*

	1919	1920	1921	1922	1923	1924	1925	1926
Borough of Manhattan:								
Total cases	4,531	14,202	4,531	16,671	7,066	11,858	9,483	13,043
Total deaths	143	392	118	575	159	237	130	306
Mortality, %	3.15	2.74	2.60	3.27	2.25	1.99	1.37	2.34
Willard Parker Hospital:								
Total cases	506	1,006	374	1,158	676	948	630	1,098
Total deaths	58	148	34	269	71	102	41	115
Mortality, %	11.46	14.7	9.09	23.22	10.95	10.76	6.21	10.47
Per cent borough cases in Willard Parker Hospital	11.16	7.03	8.25	6.95	9.56	7.99	6.96	8.42
Per cent borough deaths in Willard Parker Hospital	40.56	37.76	28.81	49.36	46.54	43.04	31.54	37.58
Ratio per cent cases to per cent deaths	3.63	5.37	3.49	7.1	3.87	5.39	4.53	4.46

facts are brought out, among them the biennial increase in the incidence of measles (table 8). An attempt has been made to have our figures, and therefore our conclusions, as safe as possible by combining groups of years (table 9). Here the second and third columns

TABLE 9.—*Measles Mortality Before and After Institution of Aseptic Technic*

	Massed Figures		
	1919-1923 Inclusive	1920-1922 Inclusive	1924-1926 Inclusive
Borough of Manhattan:			
Cases	47,101	35,504	34,384
Deaths	1,357	1,055	673
Mortality, per cent	2.88	2.97	1.96
Willard Parker Hospital:			
Cases	3,729	2,538	2,706
Deaths	583	451	258*
Mortality, per cent	15.67	17.77	9.16
Per cent borough cases admitted to Willard Parker Hospital	7.89	7.15	7.87
Per cent borough deaths occurring in Willard Parker Hospital	42.96	42.74	38.34
Ratio per cent cases to per cent deaths	1:5.44	5.98	4.87
59 lives saved			

* 317 expected, 11.73 per cent.

are formed from the totals of two heavy, and the intervening light, epidemic years; the first before, the second after, the institution of the technic. Table 10 presents the cross infections records. Only cross infections with other contagious diseases are listed here.

TABLE 10.—*Secondary Infections: Influence of Aseptic Technic, Willard Parker Hospital*

Entire Service	Primary Cases	Massed Cases	Infected After Admission	Massed Cases	Per Cent	Massed Per Cent
1922	4,598	8,220	87	159	1.88	1.93
1923	3,622		72		1.98	
1924	3,512	10,209	27	86	0.76	0.84
1925	3,574		37		1.03	
1926	3,123		22		0.70	

With experience, aseptic technic probably can be modified somewhat. It cannot replace other methods of control. It is only as strong as the weakest link in the human chain practicing it. One person can undo in a few moments the careful work of many.

24 West Tenth Street.

IMPORTANCE OF PEDIATRIC CARE IN OPERATIVE TREATMENT OF HARELIP AND CLEFT PALATE*

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OMAHA

In reviewing the reports in the literature of infants with the defects of cleft palate and harelip I find that practically all the articles deal with the surgical aspect of the condition and very few are devoted to the pediatric care of these cases. I note also that there is a difference of opinion among the surgeons, not only in this country, but particularly in the British Isles and Europe, as to the time of operation. Mr. Addison[1] and Mr. Taynor of England advocate operation within the first to the third year and later. The majority of American surgeons, and particularly the oral surgeons, advocate the early operation within the first few weeks of life. Their opinion may be summed up by the following statement of Dr. Truman Brophy,[2] who says:

> A cleft palate is a fissure, a separation of well developed parts, not with rare exceptions the result of arrested development or failure of the normal quantity of tissue to enter into its structure. It is practically a wound, a cleft, surgically like an ununited fracture. I hold, therefore, that it should be closed in early infancy, when it can be accomplished most easily with less surgical risk and with better results than at a later period in life.

It is very striking to note that all authors agree that heredity plays a definite part in the etiology. In this series of cases we have been able to obtain many histories of similar defects in one or the other side of the family; in one family three children were affected with this condition, and there were several families in which two were affected. No doubt heredity is one of the common predisposing causes to cleft palate.

Among the devices designed for feeding, probably the one most frequently used is Dr. Brophy's cleft palate nipple. Dr. Foote[3] recommends a new obturator which consists of a dental dam with tapes. The obturator is to be placed over the child's nostrils to increase the negative pressure in the mouth during the act of sucking, by preventing the entrance of air from the nasal cavity through the cleft palate. Foote states that the length of time consumed in bottle or teaspoon feeding averages from thirty-five minutes to one hour, and with the use of his obturator this time is shortened. His article is practically the only one from the pediatric point of view that has been written on this subject in the last few years.

Dr. James S. Stone,[4] in his article on this subject, describes the preoperative care that he uses, and recommends breast feeding, or the spoon, medicine dropper, Breck's feeder or ordinary nipple. He states that infection in the mouth or nose is a source of danger for two reasons: (1) increase of intestinal infection, and (2) pulmonary infection, but he does not give any preoperative measures other than the feeding. He advises opiates to keep the child from crying after the operation.

* Read before the Section on Diseases of Children at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Addison, O. L.: Lancet **1**: 818 (April 18) 1925.
2. Brophy, T. W.: Cleft Lip and Palate, Philadelphia, P. Blakiston's Son & Company, 1923.
3. Foote, J. A.: Malnutrition in Infants with Cleft Palate, with a Description of a New External Obturator, Am. J. Dis. Child. **30**: 343-346 (Sept.) 1925.
4. Stone, J. S., in Abt's Encyclopedia.

This is also advised by several other writers, but in this series of cases we have never found it necessary. Dr. Stone states that hyperpyrexia as high as 108 or 110 F. follows the operation. This, I believe, can be prevented by preoperative and postoperative care.

Dr. Griffith [5] states that in spite of all care, death generally results in severe cases, not so much from lack of food as on account of attending constitutional debility. If the child survives, he believes that the operation is best deferred until the second year or later.

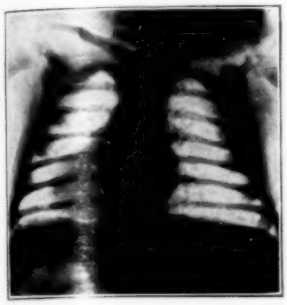

Fig. 1 (Baby P.).—Normal thymus.

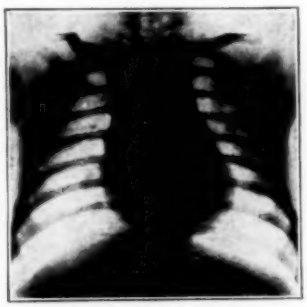

Fig. 2 (Baby W.).—Enlarged thymus.

Dr. W. E. Ladd [6] operates between the first and second year and reports, as his mortality, harelip, 2.2 per cent and cleft palate, 3 per cent.

Dr. J. Wallace Frank [7] gives a mortality between 7 and 8 per cent.

Dr. H. P. Ritchie [8] credits the pediatrician for his low mortality.

Dr. Thomas F. Mullen [9] states that the cooperation of the pediatrician is vital to complete success.

I sent a questionnaire to five oral surgeons—Dr. Truman W. Brophy of Chicago, Dr. Vilray P. Blair of St. Louis, Dr. Henry S. Dunning of New York, Dr. Chalmers Lyons of Ann Arbor, Mich., and Dr. Frederick B. Moorehead of Chicago.

The first question was whether a pediatrician was uniformly employed in the care of the infants before and after operations for defects of the palate and lips. All answered "yes." Dr. Lyons said that he considered it imperative for best results.

The second question was with regard to the mortality ratio. Dr. Brophy gave as his rate 2 per cent; Dr. Lyons less than 1 per cent, and Dr. Dunning said merely that it was very low.

The third question was with regard to the manner of feeding. Dr. Brophy replied that he uses the Brophy nipple; the others employ various droppers and bulbs.

The fourth question was whether a roentgenogram of the thymus was taken as a routine measure before operation. Dr. Dunning said "only in certain cases"; Dr. Blair said "no"; Dr. Lyons replied "always," and Dr. Brophy said "yes."

The fifth question asked at what age operation for cleft palate was performed. Dr. Dunning, Dr. Brophy and Dr. Lyons prefer operation during the first few weeks of life. Dr. Blair does not operate on the bone.

These answers show a uniformity of opinion, and as they come from men of wide experience in oral surgery, the fact that the cooperation of the pediatrician is considered of the utmost importance is noteworthy. But it is surprising in looking over between forty and fifty articles on surgery of the palate to find that not many give the credit of the successful results in this work to the cooperation of the pediatrician, and that those who do not employ the pediatrician consistently report a much higher mortality rate.

I consider the routine roentgen-ray examination of each infant prior to subjecting it to operation of importance. There is practically nothing written in the pediatric literature in regard to this point. Dr. Brophy learned early in his experience, following the loss of an infant from a thymus enlargement, that the study of the thymus gland is of the greatest importance. He adopted, as a routine measure, a roentgenogram of the child's chest to determine whether the thymus is of normal size; and advises, if the gland is enlarged, that operation be deferred for several weeks until the gland can be reduced by roentgen-ray treatments. In the first part of our series we did not employ this routine measure, and on several occasions at the beginning of the anesthetic the child became cyanotic and had difficulty in breathing. The operator, who was familiar with this condition, stopped the anesthetic, refusing to go on, and in each instance the roentgenogram showed an enlarged thymus. We also learned by bitter experience, following the only death in this series, that routine roentgenographic examination would prevent this disaster, as it is not possible to percuss an enlarged thymus in an infant within the third or fourth week of life.

The number of enlarged thymuses that we have found during this routine examination is surprising. A review of the records of fifty-four cases in which a roentgenogram was made revealed eleven that showed sufficient enlargement of the thymus to warrant treatment. Usually two treatments given from five to seven

Fig. 3.—From left to right, Baby W., following operations for double cleft palate with premaxillary protrusion and double cleft of lip; Baby P., following similar operations; Baby S., prior to operation; Baby W., after first operation.

days apart are sufficient, and operation can be performed within from ten days to two weeks after treatment. It is absolutely necessary to follow out the same technic in all cases, for occasionally, if this is not done, the enlargement will be overlooked. Just recently, I received a report from the roentgen-ray department that an infant 6 weeks of age did not have any enlargement of the thymus. During and immediately after the operation the child had quite a little difficulty in breathing; consequently, prior to the second operation I had a recheck made on the roentgenogram

5. Griffith, J. P. C.: Diseases of Infants and Children, Philadelphia, W. B. Saunders Company, 1919.
6. Ladd, W. E.: Harelip and Cleft Palate, Boston M. & S. J. **194**: 1016-1025 (June 3) 1926.
7. Frank, L. W.: Congenital Defects of Lips and Mouth, Kentucky M. J. **24**: 331-335 (July) 1926.
8. Ritchie, H. P.: Congenital Cleft Lip and Palate, Minnesota Med. **9**: 664-666 (Dec.) 1926; Congenital Cleft Lip and Palate: Muscle Theory Repair of Lip Cleft, Ann. Surg. **84**: 211-222 (Aug.) 1926.
9. Mullen, T. F.: M. J. & Record (supp.) **122**: 402 (Oct. 7) 1925.

and found a markedly enlarged thymus. The child was given the usual treatment, and with the second operation, which followed six weeks after the first, there was no difficulty whatever in breathing either during or following the operation. I instituted this routine examination about two and a half years ago when I found that the results of percussion in infants from 2 days to 3 weeks of age were unreliable, and that the dangers of operation were very much minimized without harm to the child. I would therefore recommend that every infant that is to undergo an operation of this type should receive a routine roentgen-ray examination to determine the size of the thymus gland.

REPORT OF CASE

In the series of 103 cases, the mortality was less than 1 per cent, although in the majority of cases the child had two or three operations. Only one case ended fatally:

Baby Ann, who was admitted to the hospital, July 15, aged 5 weeks, and whose birth weight was 8 pounds (3,629 Gm.), weighed 7 pounds 10 ounces (3,459 Gm.) on admittance. Her general condition was good and she showed a satisfactory gain in weight. The stools were yellow and soft. The child had a cleft palate and a bilateral cleft of the lip with premaxillary protrusion. Five days after admission, at which time the infant weighed 7 pounds 14 ounces (3572 Gm.), the bilateral cleft and premaxillary protrusion were operated on by Dr. Shearer under ether anesthesia. The time of operation was forty-five minutes. The immediate postoperative condition was good, and the highest temperature recorded was 102 F. Five hours after operation, the baby began to retain her feedings. She lost 2 ounces the first forty-eight hours following operation and then began gaining: 2 ounces on the third day; 1 ounce on the fourth day, and 1 ounce on the fifth day. The temperature was normal twenty-four hours following the operation, and did not go above 100 F. rectally after this; apparently the child was doing as well as any child that we have taken care of. In the afternoon of the sixth day, the child became cyanotic and had difficulty in breathing. All the signs of an obstruction of the larynx and trachea were present. Following the administration of epinephrine, atropine and oxygen, the child showed some evidence of improvement. The diagnosis of thymic enlargement was made, although after an examination of the larynx, Dr. W. A. Cassidy reported that there was nothing that he could see to cause the stenosis of the larynx. The infant was roentgenographed, and it was noted that the thymus was very much enlarged. Roentgen-ray treatment was instituted, and some slight change in the condition followed. At times the infant seemed to breathe easier but it was necessary to continue the administration of oxygen at intervals throughout the day and night. The following day she received another roentgen-ray treatment in the morning. In the evening the breathing was somewhat better, and at that time we thought we were out of the woods, but the following day the condition began to get worse. After midnight it became more difficult for the infant to get her breath. She became limp, and did not respond to medication. The respirations became more and more labored and shallow in character, and the child died. In this case, a routine examination of the thymus had not been made prior to the operation. It is rather unusual for symptoms to develop this late following the operation. As a rule, if an enlarged thymus is overlooked these children will show some evidence of the condition during the operation and have difficulty in breathing, but in this case the child did not show dyspnea or cyanosis during the operation. In fact, one of the first questions asked at the time the child developed cyanosis and difficult breathing was whether or not it had had any difficulty during the operation. As the child had not been examined roentgenographically, we had no way of suspecting that there was an enlarged thymus until the symptoms developed, and since then we have instituted the routine examination.

COMMENT

It is difficult to form an opinion of, or accurately determine, the exact cause of the mortality in infants suffering from these defects. There is no doubt that many of them die from inanition and general debility or the other nutritional disturbances and upper respiratory infections which they have prior to operation or prior to being referred to the oral surgeon. The mortality varies markedly in the reports of different writers, but, in the hands of the experienced oral surgeon who takes all precautions and considers the infant a medical case or a pediatric problem not only at the beginning but also following the operation and during the child's stay in the hospital, a marked decrease in mortality has been attained, and it has been shown conclusively that this operation can be performed and has been performed with practically as low a mortality as any simple operation in infancy. It is remarkable what these infants go through. The first operation lasts about an hour, depending on the operator, and the second operation about forty-five minutes. This means that the child receives an anesthesia the same length of time. I can remember when we had a great hesitation in operating on infants on account of the anesthesia, but it has been shown in the last few years that infants stand the operation and anesthetic with very little shock.

Fig. 4 (Baby S.).—Referred at 3 months, 2 weeks of age, weight 7 pounds 2 ounces (3.2 Kg.), had been fed with condensed milk. Evidence of rickets and malnutrition; bad risk for operation.

The ratio in our series of cases with regard to sex was fifty-seven boys to forty-five girls, so that there is very little difference as to sex in the incidence of this defect.

In the last five years Dr. H. M. McClanahan and I have taken care of 103 patients in collaboration with Dr. William L. Shearer at the Methodist Episcopal and the Bishop Clarkson Memorial hospitals in Omaha. In the first part of the series we noted that the infants with the defects of harelip and cleft palate were not sent in early, that is, within the first few days of life, but were sent in during the second and third week, when they were usually in very poor condition. We have endeavored since then to have the physician who has the care of these infants send them immediately to the hospital during the first few days of life, as they are unable to nurse and as a rule have been placed on artificial feeding, which is not suitable to this special condition. Of the infants that we have seen, six were from Omaha. The others were sent in from various towns in Nebraska, Iowa, Kansas, South Dakota, Missouri, Idaho and Wisconsin, mostly from the rural communities, where this specialized infant feeding is required so rarely that it is difficult to have it properly carried out. We therefore advise the physician to send the baby to the hospital early, because we feel that the infant will receive much better care from the nurses who are trained in feeding this type of patient, and that,

by receiving the child early, we shall have a better opportunity to get a more perfect result.

From the number of cases and the number of days the infants are in the hospital, it can readily be seen that there are always a number of these infants under care in the hospital. It usually takes from a few days to two weeks to get the child adjusted to its new food so that it will gain satisfactorily. Then the first operation can be performed. This consists in bringing the bones

Fig. 5.—Method of feeding.

together, and the average time consumed by the operation is forty-five minutes. Six weeks later, the cleft of the lip is repaired, the time depending on the type of case, averaging from twenty-five to forty-five minutes. Ten days following the last operation the stitches are removed; twenty-four hours later the baby is fed with the regular nursing bottle and in another twenty-four hours is discharged from the hospital. The average number of hospital days in cleft palate and harelip cases is sixty-three. Since January of this year, I have placed a quartz light in the nursery of the Methodist Episcopal Hospital, and all infants are given a routine exposure every morning following the bath. This was instituted with the idea of its taking the place of the exposure to sunlight, of which these infants are deprived for a period of nine weeks. A later report on the effect of routine exposure to quartz light will be made. We have found from experience that during the months of January, February and March there is a much greater prevalence of upper respiratory infections and regurgitation, and we are endeavoring to overcome these conditions by supplying artificial sunshine and moisture.

Babies with harelip or cleft of the soft palate are fed in the usual manner. Babies with cleft of the hard palate are not allowed to nurse from a nipple. Perhaps the easiest way would be to feed them by gavage; but when this is done, the baby does not exercise the muscles of the jaw. The infants are placed on a three hour schedule, with seven feedings in twenty-four hours. The equipment used in feeding consists of an ordinary rubber ear syringe, a sterile cup and a bowl of hot water. The feeding is placed in the sterile cup, and this cup placed in a larger bowl with hot water to keep the feeding warm during its administration. In giving the milk, the nurse is expected to place it on the back of the tongue, and in this way the infant must swallow it. It is, we believe, better in all the cases in which operation is to be performed not to use any mechanical device or nipple on account of irritation. The baby in this way receives its training during the first ten days or two weeks. In a check that was made of 150 feedings in order to establish the number of minutes it takes to feed a baby by this method, the average time was found to be fourteen minutes. If the child receives the food too rapidly it is very apt to regurgitate, and if the baby regurgitates most of the feeding, the nurse is instructed to feed it again. If there is persistent regurgitation or spitting up, the head of the bed is elevated 6 inches. Occasionally, it is necessary to feed by gavage. In several instances intraperitoneal injections of physiologic sodium chloride solution, as well as dextrose intravenously and intraperitoneally, were administered to combat dehydration. The formulas for feeding are usually very simple modifications of cow's milk plus cod liver oil and orange juice. Occasionally it is necessary to use lactic acid milk and other methods of modifying the milk. Two days before the operation the infant is given 5 grains (0.3 Gm.) of calcium lactate in its feeding with 5 per cent dextrose solution between feedings. The last feeding is given four hours before operation. After operation the baby is put on a pillow with the head low, and cuffs made from cardboard and covered with cotton flannel are placed on the baby's arms, immediately on its return from the operating room. If oozing is more than usual, a thromboplastic preparation is given orally and the bleeding area is gently swabbed with it. Fischer's solution in one-half strength is given by rectum immediately on the return to the nursery. The first feeding, four hours after the operation, is of one-half strength, and this is continued for the first twenty-four hours with 5 per cent dextrose solution between feedings. Irrigations of the mouth with physiologic sodium chloride solution are given three times daily. For this, a regular irrigating can with a soft rubber catheter adjusted to it is used. After

Fig. 6 (Baby J. S.).—Cleft of palate, lip and left cheek. Third nostril on left side.

the lip operation, the sutures are cleansed by swabbing with sterile gauze and boric acid solution. The method of feeding is the same following the operation as prior to the operation. Twenty-four hours after the removal of the sutures from the lip, the baby is placed on the ordinary feeding bottle equipped with a nipple.

We usually see these infants again when they are from 14 to 16 months of age when the third operation is performed, and in this way have been able to check their physical progress. If our instructions to the parents to write to us from time to time for advice in

regard to the feeding, and to consulting their home physician, who has been instructed in the details of the case, have been followed, we find that the infants have usually progressed more satisfactorily. If, however, the parents do not follow the advice as to the feedings but place the child on some proprietary food and fail to give cod liver oil, we find all the evidences of rickets, and the surgeon tells us that he recognizes this condition during the operation, as the child does not do as well as the one that has developed along normal lines. Consequently, we believe that it is very important not only to look after the child during its stay in the hospital but also to advise the mother as to the increasing of the formula and the diet after 6 months of age, and this can be done in the majority of cases only by close cooperation between the mother, the local physician and the consultant. As few of our patients are in the local vicinity, this cooperation does away with the hardship of long trips to have the child examined at moderately frequent intervals.

CONCLUSIONS

1. The mortality of surgery of the cleft palate or of other surgical intervention is lowered only by preoperative and postoperative care under supervision of a competent pediatrician or one well trained along this line.
2. Every cleft palate case is first a pediatric problem and second a surgical one.
3. True success and the results obtained cannot scientifically be traced to surgery itself.
4. Routine examination of the thymus is essential.
5. Hospitalization should take place as early as possible.

Medical Arts Building.

ABSTRACT OF DISCUSSION

DR. F. W. SCHLUTZ, Minneapolis: Dr. Henske brought out some excellent points in his paper. One of the chief ones is that cooperation between surgeon and pediatrician is most essential. We have rather a large cleft palate service at the University Hospital, in charge of Dr. Ritchie, who has this surgical point of view and will not accept a patient for operation who has not been in the hands and under the care of the pediatric department and until we are ready to say that the patient should be operated on. He awaits the decision of the pediatrician before proceeding with surgery. That is the way it should be, and the results are reflected in the extremely low mortality rate. I do not quite agree with Dr. Henske as to the need of irradiation in every case of enlarged thymus. We certainly have not encountered this complication very much in our cases of cleft palate. An interesting point brought out yesterday in discussion is that there possibly is more thymic disturbance in some regions than in others. We do not see definite thymic disease very often, and I never make it a practice to irradiate a patient for that particular thing unless I feel that there are definite symptoms. I am convinced that a large thymus is a factor we need to worry little about. The thing we must worry about is the presence of other pulmonary disorders, especially infections of the upper respiratory tract. It is extremely important to be certain that these are absent before one lets the case proceed to the operating table. I think that some of the very bad results and some of the cyanosis that occur occasionally during anesthesia are due to such causes rather than to enlarged thymus. It is certainly the correct thing to have these patients sent early to the hospital and placed under proper pediatric management. It is possible, however, to manage such a patient at home if the mother is properly instructed in the matter of breast expression and knows how to practice it. We do sometimes consent to have a patient remain in the home, if the mother is intelligent enough and knows how to do that. Correct feeding is very important. We use all the factors we know of—light, cod liver oil, and other things—that would favor as rapid a growth of the baby as possible. The choice of food is quite important. We favor such mixtures as lactic acid and Bulgarian buttermilk. These babies come to us in very poor condition, and are especially dehydrated. The type of food that will permit the use of high carbohydrate content is the one that gives the best results. We prefer to feed those with cleft palate by tube. We have not had much experience with the ingenious device mentioned by Dr. Foote at a previous meeting, but with the tube feeding we have had satisfactory results. The moment the child has had the lip operation (Dr. Ritchie does the lip operation first), it is trained to take artificial food from a receptacle.

DR. JOHN A. FOOTE, Washington, D. C.: I should like to have had my records here in which I have tabulated the nutritional condition of a number of infants with cleft palate studied in the hospitals of Washington, and through the records of the Massachusetts General Hospital. This table contained the weights and ages of infants ranging from 3 weeks to 6 months. One table lists thirty infants and the other seventy-five infants, the latter from the Massachusetts General Hospital. The reduction of weight from the normal average in the first table was about 40 per cent, and in the second table it was over 30 per cent, which proves conclusively that there is some need for work of this sort, work such as Dr. Henske is doing so well. In studying later the probable reasons for this difference, I found that in many cases it took a long time to feed these children and they did not get the quantities of food the normal child got. They got from one-third to one-half what the normal child got. The duration of feeding varied from fifteen or twenty minutes (which is normal) to as much as one hour. The child with cleft palate is spending a lot of energy in obtaining food. We know that it requires ten times as much energy to nurse the breast as the bottle. Sometimes the attempt is made to feed such infants at the breast. In remedying that, I tried to remember the physiology of normal sucking. In sucking, the mouth enlarges to produce a vacuum, while the throat closes. That vacuum is not produced while there is a hole in the palate. We decided to measure the vacuum content of these children by a tambour record attached to the nursing bottle. In premature infants we found a slight rise. In the normal, a considerable rise was noted, such as is seen in the normal pulse. In the infant with cleft palate, we found about one third of the normal rise. We decided that the simplest way to prevent the loss of vacuum was to close off the nostril, and for that purpose we used a strip of rubber band over the nose. When children are placed in an upright position it is wonderful to see how much fun they get out of the bottle. The undergraduate nurse, as a rule, will not use this appliance intelligently but the supervisor can be induced to take an interest in using it. The baby must be upright; and when the nose is sealed, a vacuum is created in the mouth. The baby will enjoy the normal act of sucking. That is one of the pleasures a child gets in eating. It will begin to gain immediately. This will not work in a premature child, with weak sucking reflex, nor in children with intermaxillary snouts, but in selected cases that are properly adapted to the use of this arrangement, it is one of the best things that can be used.

DR. C. ULYSSES MOORE, Portland, Ore.: The preoperative care of cleft palate cases is truly a pediatric problem. Any method that lessens the postoperative use of the lips and jaws hastens healing and decreases the number of operations. An infant will forget that he has a mouth, provided nothing is permitted to touch his lips for a period varying with his age. From one to three weeks of preoperative training usually suffices. The hands must be tied down and the feeding done with a small catheter, preferably through the nose. In due time, the lips remain almost as quiet as the ears. As breast fed babies are so much less fretful, breast milk becomes essential in these cases. The mother should be taught proper expression technic for her particular type of breast, and the milk thus obtained divided into as many feedings as the weight indicates.

MYELOPHTHISIC SPLENOMEGALY

MAX BALLIN, M.D.
AND
PLINN F. MORSE, M.D.
DETROIT

This report relates to a type of splenomegaly found in two adult patients who presented a clinical and pathologic picture distinct from those previously noted, and constituting a separate disease entity.

CLINICAL FEATURES

The patients presented themselves complaining of abdominal tumor without other disability except general weakness and liability to fatigue. One was a woman, aged 34, the other a man, aged 43. There was no general adenopathy, and no icteric tint to the skin. The physical examination was entirely negative. Roentgen-ray studies made of the thoracic organs and gastro-intestinal tracts were without positive result. The urine was normal and in the second case did not show an excess of urobilinogen with Ehrlich's reagent. The first case was seen before this test came into use. The stools were normal microscopically, and in the second case had no increase of urobilinogen. The blood observations were as follows; the limiting values found at many examinations are given: hemoglobin, from 75 to 85 per cent; red blood cells, from 3,000,000 to 4,500,000; nucleated blood cells, from 16,000 to 24,000; differential: polymorphonuclears, from 54 to 60 per cent; lymphocytes, from 18 to 22 per cent; large mononuclears, from 6 to 11 per cent; eosinophils, from 1 to 6 per cent; basophils, 1 per cent; normoblasts, from 8 to 17 per cent; megaloblasts, from 0 to 6 per cent; myelocytes, from 2 to 4 per cent.

The blood smears stained by Wright's stain were normal in appearance except for the presence of the nucleated red cells and myelocytes. There were no obvious changes in size or shape, but a high proportion of red cells had basophilic staining qualities. The white cell series were of normal appearance except for the occasional myelocyte noted. The blood platelets

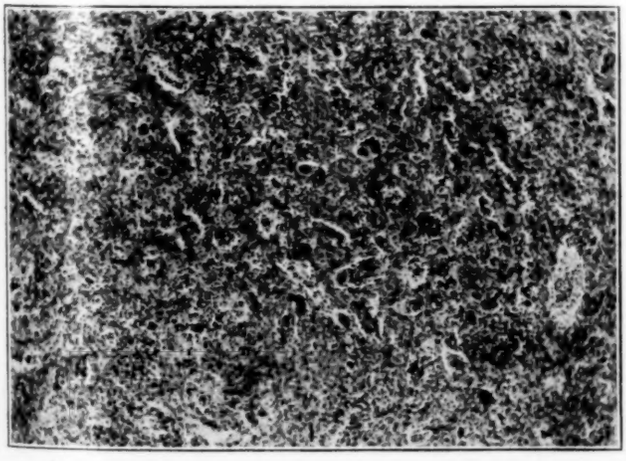

Fig. 1.—Large numbers of megacaryocytes and diffuse fibrosis of spleen with sinuses filled with nucleated cells; low power, 16 mm. objective, 4 × eyepiece.

appeared normal in the stained smears. The persistent moderate leukocytosis and the normal differentiation of the white cell morphology were quite different from the pictures seen in leukemia. The impression given by the smear was one of normal blood, to which nucleated red cells and a few myelocytes were in some manner being added. In other words, the blood was of fetal type. Brilliant cresyl blue did not reveal an increase of reticulated forms in the second case. The Wassermann reaction in the first case, and the Wassermann and van den Bergh reactions in the second case were negative. The icterus index in the second case was normal.

The blood observations might be summed up as those characteristic of the assumption of blood forming activity by tissues other than the bone marrow.

The spleen was removed in each case because of the mechanical annoyance caused by the movable splenic tumor. In the first case the organ measured 19 by 9 by 6 cm. and weighed 550 Gm. In the second the weight was estimated at about 800 Gm.

Both spleens were uniformly and symmetrically enlarged, of normal color and texture, and on section revealed very little if any increase of fibrous tissue. Microscopic examination was identical in the two, and one description covers both: The spleen was normally shaped, slightly elongated and of normal color. On section the tissue was somewhat firmer under the knife than normal. The cut section was brighter red than

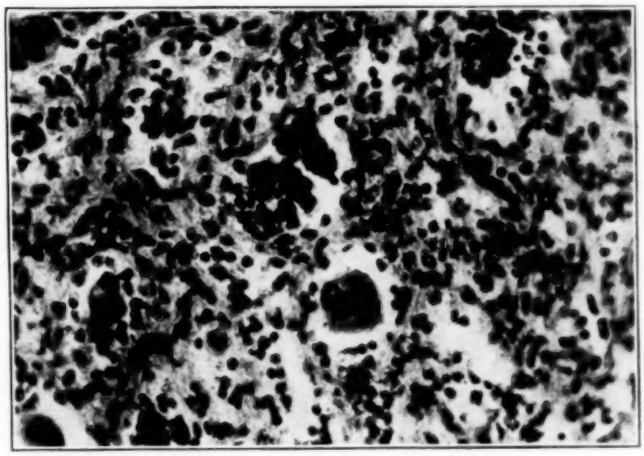

Fig. 2.—Megacaryocyte and sinuses filled with nucleated cells; high power, 4 mm. objective, 4 × eyepiece.

usual, but the color and texture were uniform throughout. The malpighian corpuscles were apparently normal in size and number. Sections were stained by the usual methods and examined under low magnification. The capsule and trabeculae were somewhat thickened and the pulp was distinctly more fibrous than normal, with dilated sinuses. The malpighian bodies were normal in size and number. Closer examination revealed the splenic sinuses filled with nucleated blood cells of various sorts. The splenic veins were filled with nucleated blood cells. The blood in the arteries contained a few nucleated cells but was more normal in appearance. Scattered here and there throughout the field were many large polymorphonuclear giant cells with centrally placed nuclei. These were identical in appearance to bone marrow giant cells. Under the high power the dilated sinuses, the veins and the pulp itself were filled with cells resembling all the various types of bone marrow cells. At the border of the sinuses the endothelial cells were enlarged and in some places desquamating. The iron reaction was practically negative for hemosiderin. The giant cells were of two main types with transition forms between them. There was a very large polymorphonuclear type measuring from 50 to 70 microns across, and a smaller type with one compact nucleus and a large amount of pink-staining protoplasm.

On the whole, the picture was that of a normal or slightly fibrosed spleen in which the pulp was partially replaced by bone marrow elements.

COMMENT

It seems probable that the splenomegaly in these cases is to be referred to the assumption of active blood forming function on the part of the spleen probably of a compensatory nature. The first patient was followed for eight years after splenectomy. She retained the same unchanging blood picture and did not suffer any disability except that she contracted syphilis several years after splenectomy. This yielded to the usual antisyphilitic measures.

The most likely explanation of the whole clinical picture is that for some unexplained reason the bone marrow had failed (or never developed) as a depot for the formation of blood cells and that extra marrow islands of hematopoiesis had been developed to compensate for marrow deficiency. Roentgen-ray studies of the bones did not furnish data, however, to support this assumption. The marrow spaces appeared normal on the plates.

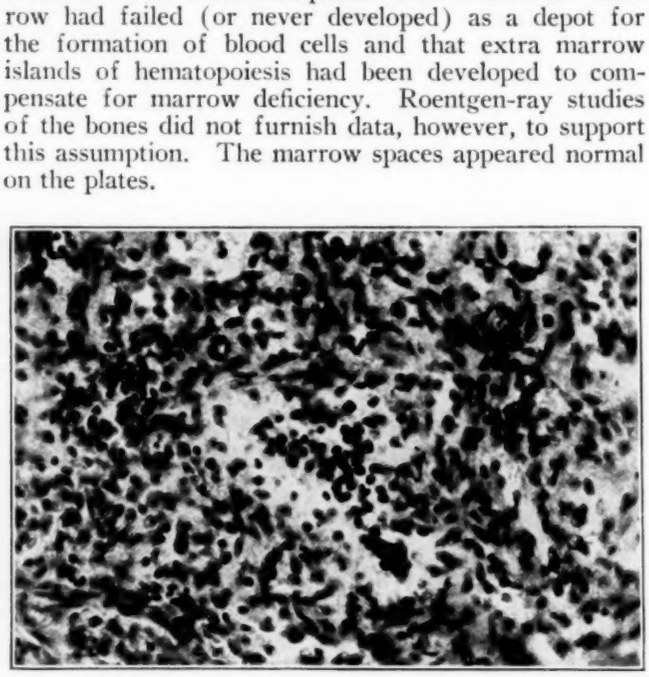

Fig. 3.—Spleen sinus with contained marrow-like cells; 4 mm. objective, 4 × eyepiece.

It might be argued on that premise that splenectomy should not be done, but the abdominal tumor in each instance was a source of annoyance and the patient was relieved of this by operation. The second patient was operated on recently and the blood picture has not been modified except that the leukocytosis has increased to 52,000 with the following differential count: polymorphonuclears, 69 per cent; large mononuclears, 4 per cent; lymphocytes, 12 per cent; normoblasts, 9 per cent; eosinophils, 5 per cent; basophils, 1 per cent.

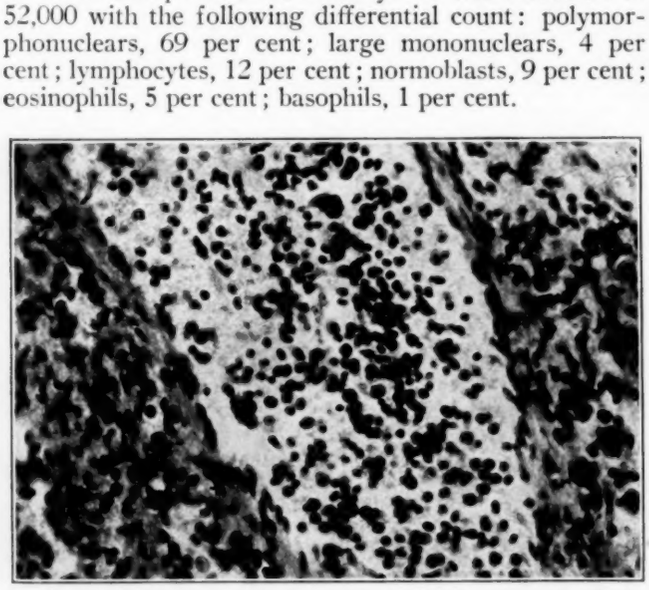

Fig. 4.—Splenic vein with nucleated blood cells; 4 mm. objective, 4 × eyepiece.

We have not found in the literature a description of a similar clinical picture. Doncaster [1] found scattered myeloid areas in a spleen, but the clinical picture was quite different.

SUMMARY

A new clinical and pathologic type of splenomegaly is characterized by a distinctive blood picture, differing from the recognized types of splenic enlargement on the basis of the blood picture, the lack of evidences of excessive hemolysis in the blood and urine, the absence of disturbance in red blood cell fragility, and by the definite histologic picture. The prognosis is good. Splenectomy relieved the patient of the only annoying symptom, but the blood picture was not altered at least within eight years (in the first patient) after operation.

Harper Hospital.

1. Doncaster: J. Exper. Med. **10**: 559, 1908.

STEREOPHOTOGRAPHY OF THE ANTERIOR EYEBALL AND FUNDUS*

ROBERT VON DER HEYDT, M.D.
CHICAGO

The value of stereophotography as a means of permanent clinical record and teaching ophthalmology is well recognized. Especially valuable is the ability to photograph minute pathologic conditions of the anterior eyeball under magnification. Stereopictures have been available for many years. They were, however, produced under great difficulty. To obtain them was a matter of not a little expense as well as painstaking effort on the part of the pioneers in this field.

Some twenty-five years ago, Druner [1] constructed a stereocamera for photographing objects for the study

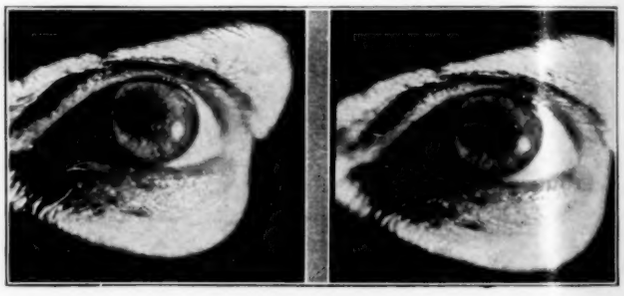

Fig. 1.—Corneal dystrophy.

of comparative anatomy and biology. I have had one of these cameras for years, but abandoned its use after a few trials which resulted in a good picture only now and then. The reason for these failures was the necessity of changing the focusing ground glass for the plate holder while the patient's eye was supposed to remain fixed. This took some time, and therefore successful exposures were the exception and not the rule. The addition of an independent focusing microscope tube to the stereocamera has greatly simplified this art.

I have recently had such a focusing tube attached to the side of my Druner-Zeiss camera. With this auxiliary, perfect exposures are now a certainty.

The Lenz-Zeiss stereocamera was the first one constructed with facilities for simultaneous focusing and exposing. Lenz [2] condemned the older Druner camera, stating that the corneal microscope paired objectives were not sufficiently rapid and therefore the time of exposure was unnecessarily long. This is not the case.

I am using the very objectives, F 55-A_0 and A_2 that come with the slit lamp and corneal microscope. With F 55 and the same source of illumination, success is certain with a half second exposure. The magnification

* Read before the Section on Ophthalmology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Druner: Ztschr. für wissensch. Mikr. **17**, 1900.
2. Lenz: Klin. Monatsbl. f. Augenh. **72**: 33, 1924.

is about 1.8 times linear. The magnification given by A_3 is about 3 times linear. This calls for a slight increase in the intensity of light or time of exposure.

Objective A_2 allows of a magnification of about 4.5 times linear. This degree of magnification is too high for ordinary usage.

For illumination, I employ the 5 ampere micro-arc lamp such as we use for fundus examination with red-free light. After focusing with this filter, I remove it during the period of exposure. The large aspheric aplanatic ophthalmoscope lens which is a part of the simplified Gullstrand binocular ophthalmoscope is used for focusing the beam. The latter is adjusted so that

Fig. 2.—Implantation cyst.

the focal diameter of the beam is about 35 mm. This illuminates the eye with sufficient evenness.

I am presenting a series of stereophotographs of the anterior eyeball taken in this manner.

Our ability to photograph the interior of the eyeball with the Nordenson-Zeiss camera has led me to attempt also to produce stereopictures of the fundus.

In view of the certainty of obtaining distinct pictures of the fundus in the presence of clear media and a dilated pupil, this is easy of accomplishment.

Any fundus that presents pathologic conditions favorable for plastic reproduction may be thus utilized. It is necessary only to pair two exposures taken on the same horizontal plane. A horizontal rotation of the eyeball will produce two exposures suitable for this purpose. I am able to present several stereophotographs of the fundus obtained in this manner.

It is unfortunate that many persons, because of their inability to see binocularly, are unable to appreciate properly the beauty of plastic photographs.

It is my purpose in this presentation to draw attention to the ease with which stereophotographs of interesting ocular conditions may be obtained. This possibility should now be taken advantage of, and I am prophesying a renewed interest and activity in this much neglected field.

25 East Washington Street.

ABSTRACT OF DISCUSSION

DR. ARTHUR J. BEDELL, Albany, N. Y.: In the scientific exhibit may be seen some of our 1,736 photographs of the inside of the eye and several hundred stereoscopic pictures of the external diseases. In this exhibit there are 266 photographs showing the variations in the fundus, arranged sixteen to a plate. It is difficult to take pictures, and yet photography of the fundus is now a part of the daily routine. The patient must be cooperative, the assistants well trained and the instruments technically perfect. In almost every picture there are two white spots, the reflection of the carbons. The pessimist looks at these and fails to recognize the details of the picture. Dr. Von Der Heydt has presented pictures of unusual value and interest. The need for accurate records has forced many of us to attempt illustration, but the photographs so far excel all previous methods that it is a real pleasure to take part in this discussion. By examination with the camera, details that have never before been observed can be seen and recorded. Stereoscopic pictures of external changes in the eye and photographs of the fundus can now be made. Those of you who do not use the camera fail to gain much information of value both to your patient and to yourself.

DR. LAURA A. LANE, Baltimore: Eye photography has not had an extensive development except by hand drawings and paintings. I should like to know what kind of plates or films Dr. Von Der Heydt uses with each camera, what his developers are, how long he develops and what kind of paper he uses for printing. Are any filters used with either camera? What aperture or time of exposure has he found best with the retinal camera? Dr. Von Der Heydt tells us this work is easy. I have to differ with him. I have used the Druner and Nordenson cameras at Wilmer Institute for some time. We have tried sending our plates and films to a large commercial developing and printing concern, and also to a photographer who was familiar with other types of medical photography. Our results have not been good. We now do our own developing and printing and have somewhat better results, but I feel they are not yet what they should be. We are far from getting results with each exposure. We have had assistance from the Carnegie Institute's expert photographer, who has had long experience with the Druner camera, and we have come to feel that the human eye at best is a difficult thing to photograph. Unless eye photographs are accurate, clear and free from troublesome high lights and show minute details, their value for teaching or showing the progress of a disease is not great; particularly is this true of the retinal pictures. High lights and scattered reflexes need to be eliminated. To do this, filters, the retouching of high lights, the skilled use of an ophthalmoscope and the study of a fundus are necessary before the final rephotographing is done. There is little literature available. I hope that those who are working with these cameras will give us some articles similar to Dr. Bedell's recent article on the Nordenson camera.

DR. HARRY S. GRADLE, Chicago: Stimulated by Dr. Von Der Heydt, I have been doing some stereophotography of the external eye. As he says, it is easy after you once have the knack.

DR. ROBERT VON DER HEYDT, Chicago: There seems to be some difference of opinion as to how easy it is to photograph the fundus. One must learn how to work the Nordenson-Zeiss

Fig. 3.—Congenital retinal anomaly.

fundus camera, but he must learn also how to use the ophthalmoscope, and the former is not nearly so difficult. Last September, at the Academy meeting in Colorado Springs, I showed the first series of fundus pictures that I took. The first one I ever made is perfect. I was not eliminating failures by showing only good pictures. The carbon spots cannot be eliminated. We must remove our objects of interest away from the center. Regarding Dr. Lane's questions about the films, in the stereoscopic Druner-Zeiss camera I have modified the plate holder. I changed it from a glass plate to a film holder. I use Eastman portrait films, extra rapid, 5 by 7, cutting them in two with scissors. I have described the methods of exposure in my paper. The Nordenson-Zeiss fundus camera takes an Agfa ultraspecial plate, 650 H. & D. They are very inexpensive, so that one need not be afraid of making a few failures. I do my own developing. The pictures are printed by the Eastman Company in their regular Kodak store. This, I admit, is not a 100 per cent perfect method. At times they overprint, and

sometimes they turn them out too light. We should not indulge in the sin of coloring, much less of retouching these pictures. Let the photograph remain the photograph. I think that the many reflexes are not harmful; in fact, I have proved that in certain conditions they have diagnostic value. They will not be seen very much in older individuals and in pathologic fundi. They are due to the great transparency of the anterior retina in youth.

FRONTAL LOBE TUMOR

A CASE SIMULATING EPIDEMIC ENCEPHALITIS, WITH PARKINSON'S SYNDROME *

EDWARD LIVINGSTON HUNT, M.D.
AND
J. R. LISA, M.D.
NEW YORK

A painter, aged 29, was admitted to the City Hospital, Sept. 20, 1926, complaining of headache and pain in the neck, which had lasted for eight weeks.

Early in 1925 he had had a mild attack of grip and had been in bed for two weeks with fever, cough and malaise. In the middle of 1926 he began to have frightful headaches, which, however, disappeared at night. He could not walk very well; every turn made his head ache. He had not had diplopia, except on one occasion, and never had had vertigo. He was somewhat sleepy and had a mild fever. Two weeks after the onset of this condition, he left his job and had to go to bed, sleeping most of the time. He was taken to Bellevue Hospital, September 14, and admitted to the psychopathic ward. While there he did not show any peculiarity of behavior, except for a constant lethargy.

In addition to these facts, his friends stated that he had always been jovial and friendly, but that with the onset of the present illness his entire personality had changed and for a month before his illness he had complained a good deal of pains in the back of his neck. Beyond these facts, nothing unusual had been noticed. There was no history of syphilis, nor was there reason to believe anything to the contrary.

The physical examination on admission was as follows:

Physical Examination.—The patient was well developed.

The eyes were under a mydriatic. There was no discharge from the ears. The nasal septum was not perforated. The mucous membranes of the mouth were of good color; ulcerations were not present. The teeth were in fair condition. The tongue was moist and coated, and there was fibrillation. There was a moderate infection of the pharynx. The thyroid could not be palpated; the trachea was in the midline, and no rigidity or arterial or venous pulsations were noted.

The apex beat of the heart was neither visible nor palpable but the apex was percussed in the fifth intercostal space, about 10 cm. from the midsternal line; the heart sounds were feeble but clearly heard; the second aortic sound was equal to the second pulmonic sound; there was no arrhythmia. The radial vessels and pulses were soft and equal. Objective signs of a pathologic condition were absent. The lungs were normal.

The abdomen was soft; no masses were felt and there was no tenderness. The abdomen was tympanitic throughout. The liver, spleen and kidneys were not felt.

There was a coarse tremor of the upper extremities.

Neurologic Examination.—The patient presented a masklike appearance with a slow, steady gait and a tendency to swerve backward. The first cranial nerve was not tested. Examination of the second cranial nerve showed that the fundi and the fields of vision were normal, and of the third, fourth and fifth nerves, that the pupils were in middilatation. The left pupil was larger than the right, with only a fair reaction to light in both. Nystagmus and strabismus were absent. There was excessive lacrimation. There were no motor nor sensory abnormalities of the fifth cranial nerve. Examination of the seventh cranial nerve showed that there was a left facial weakness. The eighth, ninth, tenth, eleventh and twelfth cranial nerves were normal.

There was no demonstrable weakness in the upper or lower extremities. There was a gross tremor of the hands, but fibrillations were absent.

The biceps, triceps and radial reflexes were overactive and equal; the Hoffmann sign was absent. Knee jerks and ankle jerks were overactive, the left more so than the right. The plantar reaction was flexion. The abdominal reflexes were active.

There were no trophic changes.

The sensory apparatus was normal.

The impression at the close of the examination was that the patient had epidemic encephalitis.

Some months later the patient entered the neurologic service of the City Hospital and died there, Feb. 1, 1927. When he was examined in the City Hospital he was lying quietly in bed and was very lethargic. It was difficult to arouse him but he could understand questions. He had no urinary control. The first morning he vomited.

The face was expressionless; the head was retracted, turned to the right, and resistant to passive movements; the neck was somewhat stiff. The pupils were moderately dilated and equal, and reacted to light and in accommodation. There was a slight external strabismus. The tongue was dry and displayed a constant coarse tremor. A marked general weakness was evident from the flabby appearance of the musculature. The abdomen was retracted. The knee jerks were increased, the left being greater than the right. A bilateral ankle clonus was present but there was no Babinski reflex. The sensory examination was normal, allowance being made for the marked lethargy. The abdominal reflexes were greatly diminished. The optic disks were slightly hazy, and the veins were distended.

In view of the marked asthenia and lethargy displayed, a diagnosis of epidemic encephalitis was made. A few days later the patient developed a slight facial weakness, followed by marked lethargy and attacks of yawning. There was a slight masking of the facies. The optic disks were normal. There was a marked gingivitis with bleeding, so that a possible diagnosis of lead encephalopathy was considered. The content of the spinal fluid was 6 cells, faintly positive globulin, and clear fluid under pressure, with a negative Wassermann reaction and a normal colloidal gold curve. The temperature was normal.

About this time the patient presented the picture of a postencephalitic condition. The features were masklike and expressionless. The body was bent forward in a stiff attitude. His movements and mentality were slow. The pupils were sluggish and failed to react to light or in accommodation. The fundi again were blurred about the edges, and there was a slight degree of swelling, together with increased tortuosity of the veins. The extremities showed increased tone and hyperreflexia. Sensory changes or palsies were not present. The diagnosis at that time was epidemic encephalitis.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

February 1, the patient was in a state of extreme tonic spasticity; he was drooling and manifested distinct evidences of respiratory distress referred to the tongue and larynx. In other words, he developed bulbar symptoms and began to choke. A few hours later he died.

The pathologic report was as follows:

Nov. 30, 1926, the Wassermann reaction of the blood was negative.

December 4, the Wassermann reaction of the spinal fluid was negative.

December 4, the result of the colloidal gold test was 1111110000.

An autopsy was performed, Feb. 2, 1927, with the following observations:

Brain.—When the skull cap was opened, the dura was found to be rather tense and slightly adherent over the right frontal lobe. A white, hard, lobulated tumor mass 5 by 4 cm. in diameter involved all three right frontal convolutions. It was surrounded by an irregular nodular depression. The depression and the surrounding brain tissue were almost as firm as the tumor mass itself. Externally the right frontal lobe was greater in diameter than the left. Examination of the basilar surface showed that the entire right hemisphere was greater than the left. There was a very distinct pressure deformity of the pons and cerebellum with an angulation of the medulla and upper cord toward the left. On transection the increase of the right hemisphere was very apparent. The tumor mass was 7 cm. in diameter, irregularly lobulated, white, and much softer in consistency in the center than on the surface, with several areas of hemorrhage. The right lateral ventricle was compressed to a mere slit over the summit of the tumor, the anterior and posterior portions being markedly dilated. On the left side the lateral ventricle was dilated, but to a lesser degree. The basal ganglions on the side of the tumor were compressed to half their normal size.

Cross-section of fibrosarcoma.

Microscopic Appearance of Growth.—The tumor was sharply demarcated from the underlying brain tissue. It consisted of large irregular cells, spindle shaped, with large oval nuclei, heavily stained. Several sections from various areas showed a distinct tendency to whorl formation. Mitotic features were absent. The immediate surrounding zone of the brain tissue showed only degenerative pressure changes. In one area there was a suggestion of infiltration.

The final diagnosis was fibrosarcoma of the brain originating from the leptomeninges.

ABSTRACT OF DISCUSSION

DR. TOM B. THROCKMORTON, Des Moines, Iowa: The fact that the authors' patient had suffered from some infectious process a year before entering the hospital is of importance; particularly so, it seems to me, in view of the history of lethargy, diplopia and headaches. The question of an arachnoiditis or of an encephalitis might well be raised. The symptoms, as outlined, seem to point to some involvement of the basal ganglions, producing a parkinsonian syndrome, rather than to a growth involving the cerebral hemisphere. I am at loss to understand why more evidence of choked disk did not occur in this case, particularly with the enormous dilatation of the ventricle on one side. Again I am reminded of instances, which I think perhaps many may have observed, in which the question of possible brain tumor is under consideration, and in which the patient, during the course of observation, acquires some type of infection, such as grip or an ordinary cold. There is at once a lighting up of the symptom group of tumor following which it is not difficult to make a correct diagnosis of cerebral neoplasm.

In this particular instance, I think that the history was one which did not help to bring the diagnosis of a cerebral neoplasm into the foreground, as it would be more natural to expect, following an infectious process with the development of lethargy, diplopia, headache and the parkinsonian syndrome, that one was dealing with a case of epidemic encephalitis. It is not unreasonable to assume in this instance that the case was one of cerebral neoplasm in which the parkinsonian syndrome of encephalitis was a complicating feature.

DR. WALTER J. FREEMAN, JR., Washington, D. C.: I should like to ask Dr. Lisa whether any effort was made to exclude encephalitis; why not a combination of the two? This patient presented for many months a picture that is almost characteristic of chronic encephalitis, and finally died of a very malignant and evidently rapidly growing tumor of the brain. That such a thing can occur I think would be granted theoretically; there is nothing mutually exclusive about inflammation and tumor, and on the positive side I can cite a case (the report of which will soon be published) that was studied in St. Elizabeth's Hospital, in which there was an actual coincidence of encephalitis and brain tumor. This was shown during life to be one of the few cases that manifested a streptococcus in the blood stream. A streptococcus was cultivated from the midbrain. The histologic picture was characteristic of encephalitis affecting the substantia nigra. The patient had presented a hemiparkinsonian tremor for a year, and there was a very sizable tumor in the left temporal lobe. I would suggest that possibly a further study of the brain of this patient, particularly of the mesencephalon, would disclose encephalitic lesions in the locus niger.

DR. A. B. MAGNUS, Chicago: How long before the patient died was the spinal puncture done in this particular case? It was stated that bulbar symptoms had developed. Were not these the result of the puncture?

DR. WILLIAM HOUSE, Portland, Ore.: The differential diagnosis between tumor of the brain and encephalitis is often exceedingly difficult, and at times practically impossible until the patient's death permits a necropsy. I recently saw a patient in consultation with a neurologist, known to many members of this section, who has had much experience with encephalitis. He had made a diagnosis of encephalitis in a case which proved on autopsy to be one of glioma of the temporal lobe, yet which presented symptoms that were quite typical of encephalitis. The attack came on with great suddenness after an exhausting hunting trip, in its acute onset certainly not typical of brain tumor. I have seen several patients who presented symptoms of brain tumor, including optic neuritis, which final results proved to be due to encephalitis, or at least not due to tumor; and several other cases in which tumor in various locations in the brain was diagnosed as encephalitis.

DR. JAMES R. LISA, New York: The diagnosis of brain tumors still remains a most difficult problem to the neurologist, especially when the tumor involves an area such as is shown

in this case. As far as the histologic diagnosis is concerned, this condition still presents a field for rather intensive work. It has been my impression for quite some time that if cases of glioma were restudied in the light of recent methods, the incidence of glioma would fall and it would be found that some of these cases are really fibromas or fibrosarcomas. Whether this case presented a combined infection of tumor and epidemic encephalitis, I cannot say. We did not do enough work on that to be able to give a positive answer to that question. Probably a more intensive study might very well have revealed the two conditions combined. The first puncture was done in December, and no symptoms developed. Bulbar symptoms developed a very few hours before death.

TREATMENT OF FRACTURES OF THE OS CALCIS BY ARTHRODESIS OF THE SUBASTRAGALAR JOINT

A REPORT ON TWENTY-SIX CASES *

PHILIP D WILSON, M.D.
BOSTON

[EDITORIAL NOTE.—This paper, together with that of Dr. Darrach, which follows it, concludes the symposium on fractures. In our last issue we published the papers of Drs. Osgood and Allison.]

It is my purpose in this communication to present some observations on the subject of fractures of the os calcis, and especially on their treatment by the operation of subastragalar arthrodesis, together with a report of the end-results in twenty-six cases that have been treated by this method. I am indebted to the staff of the fracture service of the Massachusetts General Hospital for the privilege of a special assignment which has provided the opportunity for the study of these cases.

It is first necessary to stress the severe disabling character of this injury, a feature still unappreciated by many physicians. It is doubtful whether there is any other fracture of the bones of the leg which is so nearly universally crippling in its results as fracture of the os calcis. The surgeons of the industrial compensation boards of the various states and all surgeons of much industrial experience are unanimous in assigning to this injury a bad prognosis. An equally pessimistic view is obtained from a perusal of the literature. Golebiewski,[1] in 1897, stated that he had not seen a perfect recovery in fifty-nine cases. Cotton,[2] in 1908, reported that there was permanent disability in more than 50 per cent. Magnuson,[3] in 1923, stated that in his capacity as medical director of the Illinois Industrial Commission he had seen practically no case of fracture of the os calcis which did not result in from 30 to 75 per cent disability of the foot. Satta,[4] in 1923, wrote that the disability from fracture of the os calcis might amount to as much as 80 per cent. He stated that in Switzerland the insurance companies settle these cases on a basis of one-third total disability for a period of from two to four years. These are only a few examples from a great many published statements, all of similar tone.

In order to appreciate the economic importance of the injury it is to be remembered that fracture of the os calcis constitutes about 2 per cent of all fractures (Ehret,[5] Lounsbury [6]); that 90 per cent of the patients are males, and that the average age incidence in a group of seventy-six cases analyzed by Cahill is 41 years. The injury chiefly affects wage earning men with dependent families, precisely those least able to afford prolonged disability.

MODE OF PRODUCTION

The classic mode of production of fracture of the os calcis is by a fall, the injured person striking on the heel. This was responsible in 88 per cent of Cahill's [7] series of seventy-one cases. The injury may also be produced by a direct blow, as in a lateral crush of the heel (5 per cent in Cahill's series), or by indirect violence as from a twist of the ankle (2.5 per cent in Cahill's series). Finally, one must mention the rare avulsion type of injury by muscular action in which the apophyseal portion of the bone at the back of the heel is separated and drawn upward by the achilles tendon (1.25 per cent in Cahill's series), and also the shearing accident (1.25 per cent in Cahill's series), as when the heel is caught between the edge of the floor

Fig. 1.—Comminuted type of fracture of os calcis, involving and distorting subastragalar joint; arthrodesis performed two weeks after injury.

and the moving platform of an elevator and partially or completely amputated. An open or compound fracture may result from any injury in which considerable violence is involved, but it is not common.

TYPES OF FRACTURE

The avulsion injury of the posterior portion of the os calcis, the isolated fracture of the sustentaculum tali and the amputation of the posterior process of the heel are rare accidents and require special methods of treatment. This discussion is not concerned with them, and my remarks are to be interpreted as applying only to fractures of the body of the bone.

Here there are two main types of fracture: the fissured and the comminuted. The fissured fracture is generally a little comminuted, but one or more chief fracture lines, which are fairly constant in their location, can be distinguished. It is commonly produced by a fall, usually of short distance, but may also result from a twist of the ankle.

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Golebiewski, Eduard: Arch. F. Unfallkeilk **2**: 69, 1897.
2. Cotton, F. J., and Wilson, L. T.: Boston M. & S. J. **159**: 559 (Oct. 29) 1908.
3. Magnuson, P. B.: Operation for Relief of Disability in Old Fractures of Os Calcis, J. A. M. A. **80**: 1511 (May 26) 1923.
4. Satta, F.: Arch. di ortop. **39**: 36, 1922.
5. Ehret: Arch. f. Unfallheilk. **1**: 359, 1896.
6. Lounsbury, B. F.: Surg. Gynec. Obst. **22**: 638 (June) 1916.
7. Cahill, G. F.: Ann. Surg. **66**: 711 (Dec.) 1917.

In a fall the body weight is projected downward to the os calcis through the posterior calcaneo-astragalar joint, while the ground blow is received by the downward and backward projection of the heel process. The latter tends to fracture at its constricted portion just posterior to the articular facet, the fracture line passing downward and forward. Only rarely, however, does the injury stop at this point. Usually there

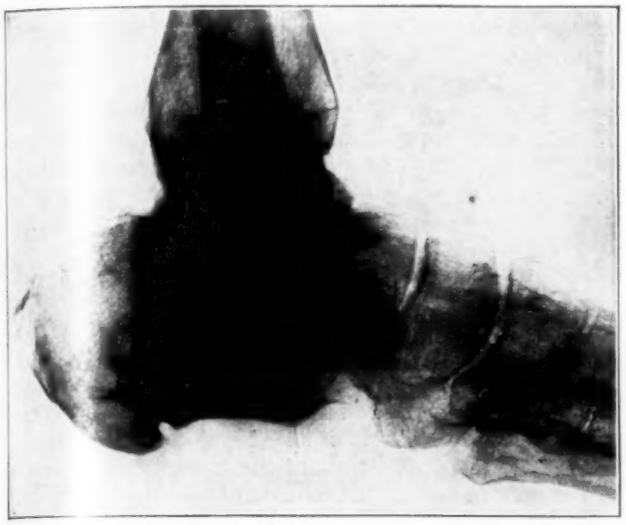

Fig. 2.—Same case as figure 1, one year after operation. The subastragalar joint is solidly fused and the patient, a man, aged 60, has resumed his work as a gardener.

is a second fracture line beginning on the outer side in front of the anterior margin of the posterior articular facet and running downward and backward. This usually passes through the inner portion of the articular surface, emerging on the medial side, posterior to the base of the sustentaculum. In the lateral roentgenograms these two fissures frequently give the appearance of the letter V, the two limbs seeming to embrace the posterior articular facet, but sometimes not to involve it. In reality, the calcaneo-astragalar articulation is almost invariably disrupted by this fracture, as I have been able to demonstrate repeatedly at operation.

The comminuted type of fracture requires little in the way of description. It is usually produced by a fall from a height, although, in the case of a brittle senile bone, little violence may be sufficient to cause extensive comminution. The amount of fragmentation may vary from a little to complete disintegration of the entire bone, including the articular surfaces.

DISPLACEMENT

Displacement may be entirely lacking, but this is indeed rare and occurs only in fractures produced by a minimum of violence. The roentgenograms are often deceptive in this respect, the lateral views especially. It is only in the plantar view that some approximate idea of the displacement may be obtained, and even this is inaccurate. In my operative experience with the recent fractures, I have never yet failed to find more injury and displacement than had been suspected from the roentgenographic examination.

In order to understand the displacement, one must bear in mind that the heel process of the os calcis lies a little to the outer side of the main weight bearing line of the tibia, while the yielding elastic structures of the plantar arch lie to the medial side. As the heel strikes the ground in a fall, the medial border sags and the foot tends to pronate, with deflection of the weight to the inner side. The posterior portion of the os calcis receives the full force of the ground blow and tends to be driven upward, outward and forward. This produces an elevation of the posterior pillar of the plantar arch, a shortening of the heel, and an outward deviation of it as well. The powerful pull of the achilles tendon contributes to the production and maintenance of the deformity. Impaction of greater or lesser extent is common. The displacement not infrequently results in the formation of irregularities and prominences on the inferior aspect of the bone which, if uncorrected, may later cause painful pressure points on the plantar surface of the heel.

Some of the chief effects of the trauma are exhibited in the region of the posterior articular facet which receives the full brunt of the body weight and in that portion of the bone immediately below it. The articular facet is driven downward toward the plantar surface, with the result that the height of the bone is decreased while its breadth is increased. The lateral plate of the os calcis is forced outward, and there is almost invariably some comminution and marked bulging of the bone at this point. The lines of fracture and the general impaction and compression focus in and about the posterior articular facet, which is transformed from a smooth convex surface snugly fitting against the dome shaped facet of the astragalus into an irregular one, the fragments lying in different planes. Incongruity of the opposing joint surfaces is an almost invariable result of the fracture and displacement. In the comminuted type of fracture the anterior and medial calcaneo-astragalar joints are also frequently involved, and occasionally even the calcaneocuboid articulation.

Fig. 3.—Fissured fracture of the os calcis involving the subastragalar joint. The patient, a woman, resumed all her duties as housewife following subastragalar arthrodesis.

In a series of thirty-eight consecutive cases of fracture of the os calcis which I myself have examined, there were only four cases that did not show marked involvement of the calcaneo-astragalar joint with serious articular deformity.

DIAGNOSIS

The possibility of fracture of the os calcis should always be borne in mind when dealing with an injury that has been caused by a fall on the foot. There is

no difficulty about diagnosis in the majority of these cases if a roentgenographic examination is made, as it should be as a matter of routine after any injury of the ankle or foot. Two of my cases had been treated as sprains for several weeks by other physicians because this rule had been neglected. Lateral roentgenograms are not sufficient; anteroposterior and plantar views

Fig. 4.—Old fracture of the os calcis, with persistent disability. The roentgenogram shows marked deformity of the subastragalar joint as the probable cause. The patient was relieved by subastragalar arthrodesis.

should also be made. I have seen a case in which it was impossible to recognize the presence of a fracture from the lateral film, but in which the plantar view revealed not only a fracture but one with considerable displacement as well. Compression fracture of the spine is a not infrequent complication of fracture of the os calcis, and may be readily overlooked unless especially sought for. This complication was not present in any of the cases forming the basis of this report.

TREATMENT

All the cases here reported have been treated by arthrodesis of the subastragalar joint. The first report of the employment of this procedure in fracture of the os calcis was by van Stockum [8] in 1912. He expressed the opinion that the seat of pain and disability in these cases is in the subastragalar joint, and stated that he had frequently performed an arthrodesis of these joints with good results. From personal communications I have learned that Hoke, Prince and Hibbs have also employed this procedure with satisfactory results. Recently, it has been recommended by Conn,[9] Allison [10] and Reich,[11] the latter reporting good results in four cases thus treated. The operation itself is a familiar one to orthopedic surgeons, having a wide range of use in the treatment of paralytic conditions of the feet resulting from infantile paralysis.

I have adopted this procedure for treatment of fractures of the os calcis after a thorough trial of other methods of treatment and after failure to obtain results that were considered satisfactory. I have employed manipulation combined with traction obtained by passing a sound over the top of the os calcis, and in certain cases have lengthened the achilles tendon in order to counteract the deforming pull of the powerful muscles at the back of the leg, and to correct the upward displacement of the heel. I have not used continuous skeletal traction in these cases because whatever instrument is used must be applied directly to the traumatized region, and this incurs a dangerous risk of infection. I have seen one case in which an extensive osteomyelitis had been engrafted on a fracture of the os calcis in just this manner, and I have no wish to invite a similar experience.

By means of manipulation, breaking up impaction, molding the arch, direct traction on the os calcis and, in certain cases, lengthening of the achilles tendon, I have been able in only one out of many cases to obtain anything approaching anatomic correction. This experience and the observation of results in other clinics have convinced me that reduction, using the word in the same sense as it is applied to fractures in other parts of the body, cannot be obtained in the majority of fractures of the os calcis.

If it is impossible to reduce the gross displacement of the body of the bone, how much more hopeless is the attempt to obtain correction of the articular deformity, which, as has been pointed out previously, is such an important and constant feature of these fractures. On the other hand, how can one expect to obtain normal function when the subastragalar joint which is called on to bear the entire body weight in the erect position has been disrupted and the fragments dislained? Traumatic arthritis must inevitably result and give rise to pain and disability.

The evidence obtained from the examination of cases of old fractures confirms the view that the injury to the calcaneo-astragalar joint plays an important rôle in the production of pain and disability. Most of the patients complain of pain, chiefly when walking on an

Fig. 5.—Same case as figure 4. Plantar view of the os calcis of both feet. The one on the left shows shortening and outward displacement of the posterior fragment in comparison with the one on the right, which is normal. The plantar view is essential for diagnosis.

irregular surface—precisely the task which calls into play the lateral movements of the foot, whose seat is in the calcaneo-astragalar joint. The patient indicates the lateral margin of this articulation as the point at which the pain is felt. Lateral mobility is either much restricted or absent, and pain and muscle spasm are

8. Van Stockum: Zentralbl. f. Chir. **39**: 1438, 1912.
9. Conn, H. R.: Radiology **6**: 228 (March) 1926.
10. Allison, Nathaniel: Bull. Am. Coll. Surg. **10**: 15, 1926.
11. Reich, R. S.: Surg. Gynec. Obst. **42**: 420 (March) 1926.

evoked when the examiner attempts forcibly to invert the foot. The roentgenographic examination also frequently yields confirmatory evidence, such as narrowing of the joint space and sclerosis of the bone underlying the joint cartilage. Some of the cases go on to bony ankylosis, but this is rare.

It may be argued that some of these symptoms are caused by impingement against the external malleolus with old fractures fail to obtain relief after its excision. It is also certain that many of those on whom arthrodesis has been performed show an excessive amount of bulging in this region and yet are pain free. At the same time, I believe that whenever an arthrodesis is performed, the exuberant bone present should be excised and the breadth of the os calcis in this region decreased.

Cases of Fracture of Os Calcis Treated by Subastragalar Arthrodesis and End-Results

No.	Age	Occupation	Type of Fracture	Duration of Injury Prior to Operation	Date of Operation	Type of Operation	Result	Returned to	
								Light Work	Heavy Work
1	31	Salesman	Bilateral comminuted	4 days	4/ 2/24	Tendon lengthening; reduction; arthrodesis; bilateral	Injury was caused by an attempt at suicide during an attack of depressive insanity; was discharged to Psychopathic Hospital, and cannot be traced	Unknown	
2	23	Steamfitter	Fissured	7 weeks	4/ 5/24	Excision of callus; arthrodesis	Back at work without disability.....	6 mo.	10 mo.
3	23	Porter and elevator man	Bilateral comminuted	2 weeks	5/ 5/24	Tendon lengthening; reduction; arthrodesis; bilateral	Works all day at standing job; feet much deformed, but no pain or disability	7 mo.	8 mo.
4	60	Gardener	Comminuted	1 week	5/27/24	Tendon lengthening; reduction; arthrodesis	Wound infection occurred in this case with persistent sinus for 7 months; painless, useful foot; no complaint	8 mo.	11 mo.
5	31	Draftsman	Fissured	2½ weeks	8/ 6/24	Remodeling; arthrodesis	Perfect function; able to run and jump; walks 10 miles frequently	2½ mo.	3½ mo.
6	31	Bank clerk	Comminuted	2 weeks	9/15/24	Tendon lengthening; reduction; arthrodesis	Patient returned to Italy; when last seen at end of 3 months, was walking without cane	Unknown	
7	55	Teamster	Fissured	4¾ months	12/24/24	Excision of callus; arthrodesis	Normal appearing foot; no complaint; as good as ever	6 mo.	6 mo.
8	65	Housewife	Fissured	2¾ months	1/26/25	Excision of callus; arthrodesis	Normal use of foot; no pain; excellent result	3 mo.	7 mo.
9	30	Laborer	Fissured	3¾ months	3/14/25	Excision of callus; arthrodesis	Patient was last seen 9/5/25, when he was walking without limp or cane; told to resume work; lost	(?) 6 mo.	
10	37	Carpenter	Fissured	6 weeks	5/20/25	Remodeling; arthrodesis	Patient fractured os calcis opposite foot 6 years previously, and disability from this foot, which was not treated, interfered with return to work; case settled, January, 1927, by lump sum settlement	16 mo.	
11	45	Longshoreman	Comminuted	3½ years	5/29/25	Excision of callus; subastragalar joint found ankylosed	Pain completely relieved.....	2 mo.	2 mo.
12	50	Painter	Fissured	3 months	9/14/25	Arthrodesis	No disability; working at old job.....	.....	8 mo.
13	42	Baker	Fissured	1 week	10/29/25	Removal of loose fragments; arthrodesis	Patient has angiitis obliterans, both legs with chronic indolent ulcers; no complaint of foot	Has not been able to work	
14	40	Beltman	Fissured	8 months	11/19/25	Excision of excess callus; arthrodesis	Returned to old job; no trouble.....	5 mo.	7 mo.
15	30	Chauffeur	Fissured	1 week	12/28/25	Removal of loose fragments; arthrodesis	Last seen March 1, 1925, at which time was making good progress; lost	Unknown	
16	61	Dye operative	Fissured	8 months	2/20/26	Excision of excess callus; arthrodesis	Still on light work; still has some trouble, but improving	9 mo.	
17	36	Machinist	Fissured	12 weeks	2/20/26	Arthrodesis	Back at old job; no disability.....	5 mo.	6 mo.
18	20	Telephone operator	Fissured	5 years	3/23/26	Excision of excess bone; arthrodesis	Failed to obtain relief; reoperated on May 4, 1927; found to have incomplete ankylosis of calcaneocuboid and astragaloscaphoid joints; this appeared to explain patient's symptoms; arthrodesis performed on these joints	Failure	
19	34	Steamfitter	Fissured	9 weeks	5/11/26	Arthrodesis	Returned to work in November, 1926; no complaint of foot; has had to stop since on account of gradually developing hemiparesis	6 mo.	
20	60	Laborer	Comminuted	13 weeks	5/14/26	Removal of excess bone; arthrodesis	Had diabetes and chronic arthritis; back at old job	.....	10 mo.
21	63	Teamster	Fissured	10 weeks	5/28/26	Removal of excess bone; arthrodesis	Returned to old job; no complaint or disability	.....	8 mo.
22	41	Grocery clerk	Comminuted	7 months	6/20/26	Removal of excess bone; arthrodesis	Normal use; no complaint or disability	.....	6 mo.
23	48	Structural iron worker	Fissured	1½ weeks	7/26/26	Remodeling; arthrodesis	No trouble; back at old job of structural iron worker in high buildings	.....	5 mo.
24	51	Laborer	Comminuted	5½ months	10/27/26	Remodeling operation; arthrodesis	Most severe fracture of group; lateral, medial and plantar surfaces remodeled; walking with cane	Too recent	
25	46	Laborer	Comminuted	2 weeks	12/ 7/26	Remodeling operation; arthrodesis	Progressing satisfactorily; still using cane	Too recent	
26	50	Janitor	Fissured	8 months	2/ 7/27	Excision of excess bone; arthrodesis	Making good progress; walks with cane	Too recent	

of the bulging mass of bone which is so frequently present on the lateral aspect of the os calcis. Cabot and Binney [12] and subsequently Cotton,[13] Magnuson,[3] and others have attributed much importance to this feature as a cause of disability. I agree that it plays a part in many instances, but I do not believe that it is responsible for all the trouble, since many patients

12. Cabot and Binney: Ann. Surg. **45**: 51 (Jan.) 1907.
13. Cotton, F. J.: Ann. Surg. **74**: 294 (Sept.) 1921.

At operation I have invariably found evidence of gross pathologic changes in the subastragalar joint. In the cases of recent fracture this has consisted of comminution of the articular cartilage with disalinement of the fragments and organizing blood clot in the joint. In the old fractures I have found pannus formation, erosion, shredding and fibrillation of the articular cartilage. Not infrequently there has been a fibrous ankylosis, the joint space being filled with porky inflam-

matory tissue. In one case there was definite bony ankylosis with a large exuberant bony mass choking the space between the os calcis and the tip of the external malleolus.

Another frequent cause of disability in old fractures of the os calcis is foot strain resulting from the permanently pronated position of the foot. As has been stated before, at the moment of fracture the heel is driven outward as well as upward and forward. The outward displacement of the posterior pillar of the arch disturbs the equilibrium of the foot when weight is borne. The foot pronates, and from the faulty mechanics thus induced there result early fatigue and lack of endurance for a standing occupation. The operation of arthrodesis of the calcaneo-astragalar articulation provides the opportunity of correcting this deformity by the excision of a horizontal wedge of bone from the medial portion of the joint according to Hoke's method and of thus permanently restoring the foot to a good weight bearing position.

Fig. 6.—The incision ordinarily employed for subastragalar arthrodesis in fracture of the os calcis.

The upward displacement of the heel causes a certain lack of spring in the gait, but of itself is rarely a cause of disability except when it results in a shifting of the ground pressure to the forward part of the os calcis or to a bony irregularity on its inferior surface. Smoothing off of the abnormal bony prominences is the appropriate remedy for this condition. This difficulty is not often encountered and has no relation to the method of treatment under consideration.

RESULTS

I have performed the operation of subastragalar arthrodesis in twenty-six cases of fracture of the os calcis. In two of the cases there were bilateral fractures, making a total of twenty-eight feet treated by this method. All but two of the patients were men. The age incidence ranged from 20 to 65 years. The average age was 42.5 years. The occupations varied, but in twenty cases out of the twenty-six they necessitated heavy labor and prolonged standing.

This group represents all the patients who have been treated in this manner during a period of three years. It includes eighteen patients from the Massachusetts General Hospital and eight private patients. The first one was operated on in April, 1924, and the last one in February, 1927. Ten of the cases were recent fractures with intra-articular involvement and deformity, and sixteen were old fractures of the same type with persistent pain and disability. During the same period there were three cases of fresh fracture admitted to the hospital which were treated without operation.

In the group in which operation was performed, three are too recent to permit an estimation of the end-result. In the remaining twenty-three cases I have been able to ascertain the end-results in all but three. Of these twenty patients, eighteen have returned to work, seventeen to their old jobs and at the same rate of pay as before injury. The average time period from operation until return to work was 7.2 months. In only one case did it extend beyond one year, and this was the only case in which a financial settlement was made:

A man had sustained a fracture of the right os calcis in 1917. It had been treated by plaster fixation for about one month, and after a disability period of about two years he had been able to resume his work as a carpenter. He had always had trouble with this foot, however. In April, 1925, he fell from a staging and fractured the left os calcis. The operation of subastragalar arthrodesis was performed six weeks after injury. While he was convalescing from this operation, the foot which had been previously injured gave out because of the increased strain thrown on it. This foot was a classic example of the long continued troubles resulting from an injury of the subastragalar joint and gave rise to more complaint than the one recently injured. The insuring company was naturally unwilling to assume responsibility for the old injury, and finally made a small lump settlement. The man finally went back to work after a total disability period of sixteen months.

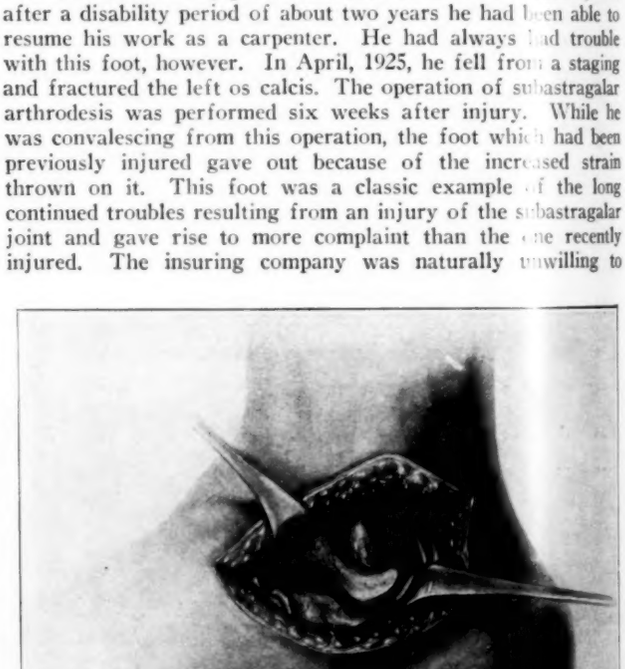

Fig. 7.—Exposure obtained at operation; joint surfaces which are to be denuded of cartilage.

One patient has not returned to work because of a complicating vascular disease, affecting the sound leg as well as the injured one, which is probably a thromboangiitis obliterans. He has no complaint so far as the injured foot is concerned, and would be able to work if it were not for the other trouble.

In one case the treatment failed in that the patient, a woman of 20 who had sustained a fracture of the

os calcis in 1921 has continued to have pain following the operation. She had been treated by plaster fixation and had never fully recovered, although able to work as a telephone operator, a sitting type of employment. Early in 1926 her lameness increased and she came to the hospital. The foot showed the characteristic limitation of lateral motion with pain and spasm on forced inversion, and the roentgenographic examination revealed an old fracture of the os calcis with irregularity of the subastragalar articulation and sclerosis of the underlying bone. In March, 1926, subastragalar arthrodesis was performed. She continued, however, to have pain when she used the foot, this being localized on the outer aspect in the region of the mediotarsal joint, somewhat anterior to the point where it had previously been felt. It was thought that the trouble was due to a failure to arthrodese the astragaloscaphoid joint and a second operation was performed, May 4, 1927. The astragalus and os calcis were found solidly fused, but there was a small bridge of bone extending forward from the anterior superior tip of the os calcis to the outer rim of the scaphoid and the inner margin of the cuboid, and forming an imperfect ankylosis with these bones. This had evidently resulted from the liberation of osteogenic material at the former operation. This observation appeared to afford an explanation of the patient's symptoms. An arthrodesis was performed of the astragaloscaphoid and calcaneocuboid articulations.

The analysis of the results in these twenty cases shows only one failure referable to the method of treatment, and even in this one case the failure is to be ascribed to faulty technic rather than to a failure of the method itself. In none of the cases did the operation fail to achieve a bony ankylosis between the os calcis and the astragalus. By far the best results were obtained in the cases of recent fracture, the average postoperative disability period for this group being five and one-half months, as compared with nearly eight months for the old fractures. This difference is to be expected and is a measure of the lowering of morale which is a natural consequence of prolonged disability.

Of interest to insurance companies is the difference in cost when arthrodesis is performed early instead of late. I have been able to secure the actual figures in two cases which were referred by the same company. The first came under observation early and operation was performed eleven days after injury. The total period of disability was twenty-one weeks and six days. This case cost the insuring company $739, of which $393 represented medical expenses, and $346 compensation at the rate of $16 a week. In the second case arthrodesis was done thirty-eight weeks after injury, and the total disability period was seventy-five weeks. The cost to the company was $1,703, of which $503 was for medical expenses and the remainder compensation. These were average cases.

OPERATION

The operation of subastragalar arthrodesis is a standard procedure and does not require special description. I have employed the lateral approach and have taken pains to remove the cartilage from all three of the articular facets between the calcaneus and the astragalus. In some cases I have performed arthrodesis of the mediotarsal joint as well. It is my impression that the results are better with the latter procedure, and I shall employ it more widely in the future. In the recent fractures I have at the same time attempted to correct deformity, and in the old fractures I have scooped out the lateral surface of the os calcis rather widely beneath the external malleolus.

Following operation, the foot is immobilized in plaster extending to above the knee. Care is necessary to see that the foot is fixed in a good weight bearing position. In order to make sure of the position, it is wise to apply a new plaster at the end of from two to three weeks, when less padding is necessary. The plaster is shortened to below the knee at the end of four weeks. Plaster fixation is continued to the end of eight weeks, but weight bearing in the plaster is permitted at the end of six weeks.

Following the removal of the plaster, the arch is supported by a well fitting plate and use of the foot encouraged. Baking, massage and active exercises aid in counteracting the swelling, in restoring the flexibility of the foot, and in shortening the period of disability.

COMMENT

The guiding motive in my investigation has been to find some procedure which could be applied to the fresh fracture soon after injury; which would lead to a strong, useful and painless foot without prolonged disability, and which could be depended on to produce this result in nearly all the cases. The disappointing results from attempts at reduction, the almost constant observation of involvement of the calcaneo-astragalar joint by the fracture, and the appreciation of the importance of articular incongruity and traumatic arthritis in the production of disability represent the guide posts which point to the necessity of fusing this joint by operation as a means of solving the problem.

The matter resolves itself into the question whether it is better to have a joint capable of a few degrees of motion, but which by that very fact is painful, or one solidly ankylosed and fixed in the position of optimum function, which is strong, useful and without pain. This question is one that has long been familiar to the orthopedic surgeon in the treatment of joint diseases, and the answer has always been unhesitatingly in favor of the latter. I see no reason why it should be different in the majority of cases of fractured os calcis.

It may be asked, Is not the disability which is created by ankylosis of the calcaneo-astragalar articulation as disabling as the condition from which the patient originally suffered? The best answer to this question is that irrespective of the method of treatment used there will be no great amount of motion in any case. My own experience in this respect is confirmed by the observation of numerous authorities. Actually, the disability due to ankylosis of the subastragalar articulation, provided there is good weight bearing position, is scarcely recognizable. The tarsal joints develop compensatory hypermobility which gives a fair semblance of lateral motion, and heavy work can be done without complaint.

SUMMARY

In treating fractures, the important thing as regards the reduction of disability is to be able to look ahead and to anticipate future difficulties before they arise. In recent fractures of the os calcis, with serious involvement of the calcaneo-astragalar articulation and distortion of the joint surfaces, I believe that there is sufficient certainty of future trouble to warrant arthrodesis of this joint, with correction at the same time of as much of the fracture deformity as possible and fixation of the foot in the best weight bearing position. In my opinion this offers the best chance of avoiding

prolonged disability and restoring the worker to his old occupation in the minimum time.

In cases of old fracture with continued pain and unsatisfactory progress, I believe that the cause of the disability is usually to be found in a traumatic arthritis resulting from a disruption of the subastragalar joint. If the evidence obtained from clinical and roentgenographic examination warrants this diagnosis, then relief of the condition is to be obtained by the operation of arthrodesis. At the same time all bony irregularities at the lateral aspect of the os calcis should be removed.

372 Marlborough Street.

ABSTRACT OF DISCUSSION

Dr. F. J. Cotton, Boston: I have seen a number of these cases, and the results were admirable. My only difference with Dr. Wilson is that I do not think he quite gives credit to the possibilities of other forms of treatment. We have had, particularly in the last ten years, a large number of patients going back to work as a result of other methods of treatment. Calcis fractures, untreated or treated, without any definite plan of correction and treatment do almost universally poorly and have a disability which is very serious and very often total from an industrial point of view. We need not discuss the variant types, but rather the compression type of fracture. There is a squashed out calcis, more or less comminuted, and with injury to the posterior joint, or in the vicinity of the joint, uniformly. The disabilities suffered from later are due to several things: to the heaping of bone on the outer side, and to interference with lateral motion, particularly in the posterior calcaneo-astragalar joint. That is perhaps the principal single factor. They are due also to an outward shifting of the heel, and every once in a while to the presence of spurs in the sole. Our methods of treating these cases have been, in the first place, the manipulative reduction with lateral compression with the thumbs, or with the mallet, and combined with that a clearing of this posterior calcaneo-astragalar joint by manipulation and rotation. If that is done, and the thing is properly handled afterward, and if there is not an extremely excessive proliferation of bone, there are good results in a very large proportion of the cases. If there is excessive proliferation of bone, or if the patient is seen too late, with disability, then one has to decide what one is going to do. Restoration of lateral motion is possible in a much larger proportion of cases than one would think. This joint may function surprisingly well if it is freed from bone in the immediate vicinity. In cases in which the factor is mainly an outward shifting of the heel, one can do an arthrodesis, and get a fair correction of that valgus into a varus position. One can do a still better correction, I think (and I have done it repeatedly with excellent results) by the old Gleich operation, which consists of an inward shifting of the heel after a section across the neck of the calcis. Some of my prettiest results are of that sort. What are we going to establish as a routine? I am not ready yet to say that we ought to do an arthrodesis as a routine. I shall continue doing the conservative thing in a certain proportion of those cases, because I like to maintain the physiologic action of the foot, if I can, and because I think, after all, that in the fresh cases there is a certain nonoperative field which is very large. In the fresh cases that look hopeless to me, including the fractures of the sustentaculum, I am going to do an arthrodesis. In the later cases in which there has been a bad coupling up again, I am going to do arthrodesis. In a case in which there is a question of outward shift of the heel, I am going to make an inward shift of the heel, because I think that I know an easier way to accomplish this. In cases in which we can spare a little time, I am going to dig out bone and try to restore joint motion as well as to relieve contact pain. From an industrial point of view, arthrodesis gives prompt results. There is no doubt about that. From the point of view of surgery, not all industrial, I think that we still had better not give up our conservative plan.

Dr. P. B. Magnuson, Chicago: Dr. Wilson has presented a method which gives excellent results, but it is rather a radical treatment, one that ought to be considered seriously before being used. I believe with Dr. Cotton that in at least 50 per cent of these cases there is a much better result from the severance of the achilles tendon, a breaking up of the impaction and a remolding of the foot. There are three places where these persons have pain, especially after a bad union: over the scaphoid; just anterior to the external malleolus in the angle in which the astragalus works, and behind and under the external malleolus. The first is from strain on the longitudinal arch of the foot. The second is from a pinching of the soft tissues and improper position of the foot. The third may result from two causes: pressure on the tendons which run under the external malleolus, or interference with the calcaneo-astragalar joint. Dr. Wilson brought out that most of these patients who had been operated on have a traumatic inflammation of the joint. Granted! The ideal method of treating fractures in other joints is to keep them moving. The war taught us that. The more we keep them moving, the better movement there is in the end. Unfortunately, with this joint we cannot keep it moving, and at the same time keep it molded into place. Cancellous bone does not fracture in any particular direction. A blow on the bottom of the heel, as a result of a fall from a height, transmits its force in many different directions. I have no doubt that many fractures of the os calcis are fractured in the calcaneo-astragalar joint, but I do not believe that every joint that has a fracture into it should be ankylosed. Neither do I believe that it is necessary to ankylose this joint, because in eighteen out of twenty-three cases in which I have operated subsequent to malunion, there has been some reestablishment of lateral motion. In eighteen of those cases there has been a settlement, before the industrial commission in Illinois, on the basis of between 15 and 30 per cent loss of the foot. There has been improvement in every case. In some cases there has not been the improvement that we would ask, and in those cases I believe that an arthrodesis should have been done in the beginning. I think that a great deal of disability in these cases comes because the heel is moved upward and backward and outward. The posterior fragment is rotated, and, consequently the foot is pronated. It is necessary to invert that foot before it is going to be comfortable. One must do some operation to bring this about. I have seen good surgeons invert a foot and then in the process of putting on a cast lose all the inversion that they had gained. The secret of inversion is turning the foot as far inward as possible, placing a few wraps of plaster around the ankle and instep, then placing a good felt pad over the outside of the foot, and putting on plaster over the tightly stretched bandage between the ankle and the knee. Thus, the inversion can be held. The inversion should not be in the front of the foot. The inversion should be between the os calcis and the astralagus, and I think that is where most of us make our mistake in inverting. It is only that kind of inversion that will maintain any correction. Arthrodesis has a very definite place, but I do not agree with Dr. Wilson that we ought to do arthrodesis in every case of fracture of the os calcis. I think that the simpler and the quicker methods can be tried first.

Dr. Philip Wilson, Boston: A question has been asked about the disability resulting from arthrodesis. Actually, this is very slight. In the first place, there is scarcely any choice since there will be very little motion no matter what method of treatment is used. Of that I am convinced after seeing large numbers of these cases. I have seen some of Dr. Cotton's patients on whom he had performed his mobilizing operation, and they had very fair motion, not the normal range, but perhaps from 60 to 75 per cent. However, I know that he has admitted a certain percentage of failures, and I feel sure there will be fewer failures after arthrodesis. In the second place, after arthrodesis has been accomplished, hypermobility develops in the remaining joints of the foot and gives a very real semblance of lateral motion. The amount of motion that will be found on examination is astonishing and unless one has had previous experience with

such cases, one will deny that there has been an ankylosis. Few of the patients are conscious of limitation of motion. I agree with Dr. Magnuson that not every fracture of the os calcis should be operated on. In recent fractures, we advise operation only where there is marked articular deformity which cannot be corrected. As far as correction of pronation is concerned, this can be accomplished readily at the time of operation; in fact, this operation was originated for the purpose of overcoming foot deformity. It is merely a matter of excising a horizontal wedge of bone from the medial portion of the joint so that the os calcis, and with it the foot, can be rotated over into the desired position whether neutral or slightly supinated. I will say that in all the patients in whom operation has been performed, a good weight bearing position has resulted, and in none are there bad foot mechanics.

FRACTURES OF THE LOWER EXTREMITY OF THE RADIUS

DIAGNOSIS AND TREATMENT*

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Any one who has fallen on his outstretched hand or experienced a backfire in cranking a car, and who has localized tenderness over the lower portion of the radius with some disability at the wrist, may be considered to have a fracture until it has been proved to the contrary. Many fractures of the lower portion of the radius do not present deformity immediately after the injury, and there may be little or no spontaneous pain. If such injuries are diagnosed and treated as sprains or contusions, the fragments may be easily displaced subsequently.

In eliciting localized tenderness it is well to allow the patient himself to press over the suspected area, with the end of a finger, pen or the rubber end of a pencil. There is much less fear and defense reaction if the patient does this himself. Moreover, after he has tried it, he is more apt to allow the examining physician to do it more carefully and thoroughly. Indirect tenderness over the site of the fracture can often be brought out by forcing the hand upward in the axis of the forearm.

The diagnosis becomes simplified if in addition to localized tenderness the other textbook symptoms are also present. When seen very early the localized swelling just above the dorsum of the wrist due to the hemorrhage at the site of fracture may present a very characteristic appearance before it is masked by the more diffuse, subsequent swelling due to edema. Ecchymosis is a less valuable sign, as usually by the time it has appeared the diagnosis should already have been established. When the fragments are displaced there is the associated deformity, and when this displacement is of the usual classic variety the silver-fork appearance is quite characteristic. In a considerable number of cases, however, the displacement is not the classic one, and the deformity is then less characteristic. On palpation, in addition to the local tenderness the bony irregularity due to the displaced fragments can often be clearly made out if it is examined before the swelling has become too marked. Abnormal mobility and crepitus are usually absent, and of course should not be sought for; nor is there anything very characteristic about the limitation of movements of the wrist.

The abnormal relationship of the two styloid processes is an excellent indication of the amount of impaction. Normally, the radial styloid is on a distinctly lower plane than that of the ulna, especially in supination; but as there is considerable variation in normal wrists as to this difference in levels, one should compare the two sides.

A roentgen-ray examination should be made whenever it is possible and as soon as possible. Frequently, it is not necessary in order to establish the fact that a fracture exists, but it is necessary in order to ascertain just how the fragments have been displaced and the extent of the comminution. The necessity for and the mechanism of reduction, as well as the details of the later treatment, should be guided largely by the results of the roentgen-ray examination. Two views, of course, should be taken, but of the two the lateral view is more valuable. In interpreting the lateral views, mistakes are often made because of two misleading factors. It is not always realized that the ventral surface of the radius curves forward rather sharply in its distal part. When this surface appears practically straight one is apt to assume that it is normal in appearance, whereas it takes quite a little angular displacement of the lower end of the bone to obliterate this forward curve. The second disturbing factor is due to the superimposing of the shadow of the ulna on that of the radius. Often the dorsal surface of the ulna will be the outstanding line, and the shadow of this bone may tend to hide the abnormal character of the radius.

Let us consider for a moment what may happen to the lower fragment. With a single transverse plane of fracture the lower fragment if displaced may be either shifted or tilted; i. e., this fragment may be moved without changing the direction of its vertical axis, or swung in one direction or another as on a hinge, that is, angulated. The shifting or the tilting may occur in the four directions. Again, the lower fragment may be driven directly upward and impacted into the upper fragment, or it may be rotated on a vertical axis and pronated or supinated on the upper fragment. These displacements rarely occur alone, and the typical textbook description is a combination of a dorsal shifting with some dorsal tilting combined with impaction. Other combinations are encountered frequently enough to warrant paying attention to these details.

Before taking up the question of treatment, I shall consider some of the less fortunate end-results seen in only too many instances of this fracture, together with their causes.

There are many patients whose wrists are widened laterally and the carpus seems to have been shifted over toward the radial side, the ulna standing out with undue prominence. This is due to unreduced impaction. Others show an angulation just above the wrist joint—a persistence of the silver-fork deformity. This means that the backward tilting and shifting had not been reduced, or had recurred after reduction.

One type of disability is interference with the flexion of the fingers both as to amount and as to power. This is often associated with a backward shifting of the lower fragment to such an extent that the sharp edge of the upper fragment presses against the flexor tendons as they are about to enter the carpal channel, so that they are compelled to work around a corner. These tendons and the median nerve are rather closely con-

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

fined by the annular ligament, and the pressure from beneath of the sharp edge of bone may cause considerable trouble.

The limitations of flexion and extension, of abduction and adduction, are due to the persistence of tilting of the lower fragment in one direction or another. Perhaps the most frequently seen difficulty, and often one of the most persistent, is that associated with pronation and supination. Women will complain that they cannot wring clothes with their former force, or without pain referred usually to the region of the ulnar head. Men have the same difficulty in using pliers or screwdrivers. Sometimes this pain is a sudden sharp one, which makes them drop whatever they have in their hands, or it may be a dull ache referred to the region of the ulnar head. This symptom, as well as the limitation in amount of pronation and supination, is probably due to the derangement of the inferior radio-ulnar articulation. Too little attention has been paid to this joint in its relation to Colles' fracture. It takes comparatively little upward displacement of the lower fragment of the radius to interfere with the smooth mechanism of this joint. In this connection it is interesting to note, however, that in the very bad deformities there is often less interference with pronation and supination than in those of narrower degree. It seems as if it were really better for the patient if these two articular surfaces were driven entirely apart than if they were left only partly in contact.

Displacements of fragments which may seem trivial in a study of the roentgenograms often give permanent disabilities; therefore they should be looked for and overcome if possible.

TREATMENT

The main indications for treatment are to reduce, under an anesthetic, as soon as possible any existing displacement and then to immobilize the wrist as long, and only as long, as there is danger of a recurrence of this displacement. In a rather large percentage of cases the displacement of the lower fragment follows the usual description, with impaction, dorsal shifting and dorsal tilting of the lower fragment with or without some pronation, and in this group the usually described method of reduction, if done early, will be satisfactory. But instead of blindly following this one method it is wiser and safer by careful study of the roentgen-ray evidence to determine whether this procedure is the wisest one to follow for the individual case. Many methods are described, but most of them have the same essential factors in common. These are, first, to disengage the impacted fragments. This is best accomplished by traction, if necessary, aided by gentle rocking to and fro. In the badly impacted cases, hyperextension may be required to disengage. This first step should be carried out thoroughly before attempting the second, which is to bring the lower fragment back into its normal position. This is carried out by continuing the traction and by pressing the lower fragment forward as the wrist is flexed. A very practical way of doing this is to hold the hand of the injured side firmly with the thumbs over the dorsum of the lower fragment and the index fingers against the front of the upper fragment. With countertraction above, a strong pull can be exerted on the hand and the lower fragment gradually worked into place. Any necessary pronation can be accomplished at the same time. But if, on the other hand, the lower fragment is shifted or tilted ventrally to any degree, the manipulations must be in the opposite direction. Whatever the displacement, however, there is one factor in manipulation which should be more strongly emphasized and more widely carried out, and that is gentleness in reduction. If sufficient traction is used and the impaction overcome by gentle rocking, the fragments can usually be restored to their proper position without increasing the injury to the bone to any marked degree. If, however, the lower fragment is simply jammed forward, without traction, into position there will be much unnecessary comminution with consequent shortening of the radius due to this additional crushing of the broken ends. Such methods increase the resulting disability.

The next step after reduction is that of immobilization. Here, again, the details of the roentgen-ray evidence are of great value. If there is a single transverse plane of fracture and the fragments have been restored to their proper places, the upward pull of the muscles surrounding the bone will continuously tend to hold this fragment in its proper position. In such cases very little immobilization is necessary, except first to protect from additional injury and second to give that much desired temporary rest to the injured part. But, on the other hand, if the plane of fracture is an oblique one there is much greater tendency for the fragment to slip out of place. This tendency to recurrence is much more marked in the cases in which there is a comminution of the dorsal surface. Here the picture is quite different from that seen in a simple transverse type. In the latter there is equal opposition to the pull of the tendons both in front and behind; but where the dorsal surface is broken up into several pieces there is opposition to the tendon pull in front, but none behind, and there is a strong tendency for the dorsal tilting to recur. To this group belong those most embarrassing cases in which an apparently beautiful reduction has been accomplished, but in which at the end of ten days or two weeks one suddenly realizes that the deformity has recurred and it is too late to overcome it. Not only do these fragments need much more prolonged immobilization, but the tendency to recurrence can be largely overcome by putting them up in the position of marked flexion of the wrist. The epiphyseal separations tend to do the same thing and should also be treated in the flexed position.

Except for the oblique and comminuted fractures, it is fair to say that it makes very little difference what type of splint is used. It is the man behind the splint rather than the splint itself, and it is the individual apparatus in which the physician can make his patient most comfortable and still prevent recurrence of the deformity that is of importance. My personal preference is for a light, molded plaster splint which extends from the necks of the metacarpals up to the ventral surface of the forearm, around the elbow, and down the dorsal surface as far as the middle of the metacarpals—the so-called sugar-tong splint. No matter what material is used, the wrist should be immobilized and the metacarpophalangeal joints left free.

In the oblique, dorsal comminuted and extensively comminuted types, the splints should be left in place for from two to three weeks. Massage and movements can then be begun and the splints discarded after two weeks more. In cases in which there is not this tendency to recurrence, massage and active movements should be started the next day, and the splints removed in from two to three weeks. A leather wristlet will often be of great comfort for the next few months.

Some of the late disabilities can be ameliorated by operation. The most satisfactory group are those with limitation of pronation and supination, with persistent pain in the region of the radio-ulnar articulation. A subperiosteal resection of the ulnar head and neck, leaving the styloid process intact, restores function, stops the pain and reduces the deformity of the prominent ulnar head.

When the forward projection of the sharp edge of the upper fragment interferes with the flexor tendons or the median nerve, an excision of the projecting lip will improve the function.

Osteotomy with removal of the dorsal triangle of new bone and restoration of the lower fragment is less satisfactory. An attempt has been made to overcome the shortening by inserting this dorsal triangle in the interval between fragments, but this is too experimental at present to warrant any claims for it.

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ABSTRACT OF DISCUSSION

DR. R. S. HOOKER, New York: Dr. Darrach spoke of the importance of examining the roentgenograms carefully before reduction. Of course, this is true of all fractures, but it is particularly of value in the fractures under discussion. It is a help not only in the reduction but in the after-treatment. It is particularly of help in the so-called borderline cases, which clinicaly show practically no symptoms other than a local point of tenderness and possibly a slight difference in the styloid processes, but in which the roentgen ray may show a slight posterior displacement and a slight impaction. This is the type of case that we are so often inclined to leave alone, perhaps because we do not want to subject patients to general anesthesia. We take a chance, and about six weeks afterward we regret it. The deformity is then more marked. There is a certain amount of limitation of movement, and no amount of massage or baking or physical therapy is going to effect a cure. Our failures can, in most cases, be ascribed to two causes: lack of proper reduction or too rough attempts at reduction, and too long immobilization. The fluoroscope, although of great help in most other fractures, is of very little help in this particular type of case. Without considering the bad cases, the comminuted cases, and the type that are so apt to displace, it may be said that any sort of splint will hold the fracture. No splint itself is going to effect reduction. Immobilization should be short and massage must be begun early. With the type of case in which there is considerable comminution of the lower fragment and no impaction, or in which the impaction has been broken up, suspension and traction is a very great help, and in some of these cases it will correct what we cannot do and hold what a splint will not hold. More than that, it has the great advantage of preventing the wrist from becoming swollen and edematous.

Our Medical Curriculum Needs Revision.—May not many things be dropped or modified? Many facts in anatomy available through the index, the descriptive text, the illustration, and the museum specimen should not occupy valuable space in a man's memory, space more properly occupied by knowledge more frequently needed and of immediate use. May not method and technic in preclinical as well as in clinical subjects be preferably taught in the lecture room, library, laboratory, clinic and ward by means of topics that are live and practical rather than by topics that are purely theoretical and concerned with rare occurrences, or with ideas still in a hazy, experimental stage? Correct habits of thinking and general principles can be taught by the study of drugs like digitalis or opium as well as by some preparation that is new, and sure to be only rarely used in practice. —Herrick, J. B.: *California & Western Medicine* **27**:182 (Aug.) 1927.

THE USE OF MERCUROCHROME AS A VAGINAL ANTISEPTIC IN THE INDUCTION OF LABOR

BASED ON AN ANALYSIS OF ONE HUNDRED AND SEVENTY-ONE CASES *

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The induction of labor by some mechanical means is undoubtedly more certain than by the use of oxytocic drugs. In certain cases, these two means may be combined to advantage. As a mechanical method, the use of a hydrostatic bag offers a comparatively safe procedure not only for inducing but also for hastening an otherwise long and tedious labor, such as may result from absence of the bag of waters, dystocia of the cervix, or uterine inertia. Furthermore, in cases of toxemia in which the patient is kept under the influence of morphine, it offers a useful means of terminating a labor that would otherwise be difficult because of the feebleness of the uterine contractions. In placenta praevia, the hydrostatic bag serves as a valuable addition to our methods of controlling hemorrhage.

TABLE 1.—*Comparison of Morbidity Following Induction of Labor in Cases With and Without Mercurochrome*

	Cases	Morbidity	Percentage of Morbidity	Days of Morbidity	Average Days of Morbidity per Patient
Without mercurochrome..	93	27	29.0	194	2.08
With mercurochrome.....	78	9	11.5	45	0.57

The disadvantage of the use of the hydrostatic bag has been the danger of infection that has always attended its employment. In two previous communications, I [1] have shown that the routine use of 4 per cent mercurochrome-220 soluble as a vaginal antiseptic during labor and delivery reduced the morbidity from childbirth over 40 per cent, and that after this procedure vaginal cultures sometimes become negative for from twenty-four to forty-eight hours. It is my purpose in this report to adduce statistics to show that, when mercurochrome is used as a vaginal antiseptic prior to the induction of labor, the safety of the hydrostatic bag is greatly enhanced.

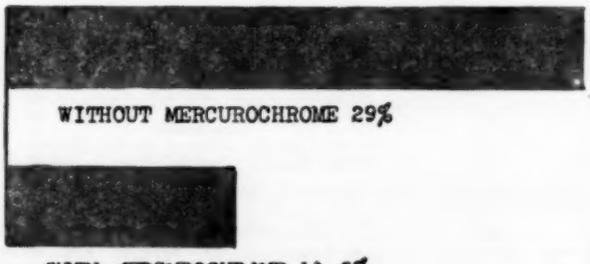

Chart 1.—Relation of the morbidity in the series with and without mercurochrome.

During the past ten years, we have had 9,580 deliveries at the Methodist Episcopal Hospital. In 171 of

* From the Obstetrical Department of the Methodist Episcopal Hospital.
* Read before the Section of Obstetrics and Gynecology of the New York Academy of Medicine, March 22, 1927.

1. Mayes, H. W.: The Use of Mercurochrome in Obstetrics, Am. J. Obst. & Gynec. **10**: 61 (July) 1925; Morbidity in Obstetrics—Its Reduction by the Use of Mercurochrome as a Vaginal Antiseptic, New York State J. Med. **26**: 384 (May) 1926.

these cases, labor was induced by a hydrostatic bag; that is, in one case in each fifty-six labors. From 1917 to 1924, there were ninety-three cases in which delivery followed the induction of labor by means of the hydrostatic bag. Since the use of mercurochrome was begun, there have been seventy-eight such cases. For two and a half years the use of mercurochrome as a vaginal antiseptic has been adopted as a routine procedure at the Methodist Episcopal Hospital, and 3,500 cases have been delivered with an uncorrected morbidity of 8.6 per cent. Therefore I have been given the opportunity of judging of the merits of mercurochrome as a preliminary preparation to the induction of labor by comparing the statistical results in these two groups of cases.

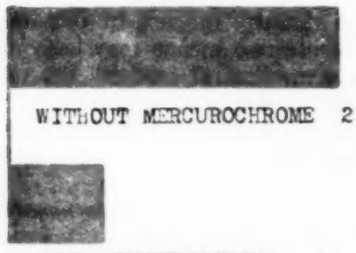

Chart 2.—Average days of morbidity in the series with and without mercurochrome.

By consulting table 1, it will be noted that in the series of ninety-three induced deliveries in the period from 1917 to 1924 there was a morbidity of 29 per cent, with an average of 2.08 days of morbidity for each patient. In this series there were eight maternal deaths, a mortality rate of 8.6 per cent (table 2). For the years 1917 and 1919 the morbidity rate was 40 per cent. Prior to 1925, we were so impressed by the high morbidity and mortality rates that we always hesitated to perform an induction of labor. However, we felt that, if infection following the use of the hydrostatic bag could be prevented and the morbidity rate thus reduced to a percentage comparable to that following an average delivery, we should be justified in employing this efficient method of inducing and hastening labor more frequently.

TABLE 2.—*Comparison of Mortality Following Induction of Labor in the Cases With and Without Mercurochrome* *

	Cases	Total Deaths	Percentage of Mortality	Obstetric	Nonobstetric	Sepsis
Without mercurochrome..	93	8	8.6	6	2	2
With mercurochrome.....	78	1	1.28	1	0	0

* In the series without mercurochrome, toxemia and eclampsia accounted for two deaths; shock and hemorrhage, for two; septicemia, for two; and pneumonia and myocarditis each, for one. In the cases delivered following the use of mercurochrome, there was only one death. This patient was subjected to induction of labor for placenta praevia and delivered by version; she died from shock and hemorrhage.

Since the routine use of mercurochrome for all deliveries was instituted at the Methodist Episcopal Hospital, seventy-eight patients have been delivered after the induction of labor by means of the hydrostatic bag. During that time, the morbidity has been 11.5 per cent as compared with that of 29 per cent in the earlier series; that is, 60 per cent less as compared with the morbidity without mercurochrome. At the same time, the maternal mortality has been reduced from 8.6 per cent to 1.3 per cent, and the average period of morbidity from 2.08 days to 0.57 day. Altogether, the preparatory use of mercurochrome seems to have effected a reduction of 17.5 per cent in the morbidity and 7.3 per cent in the maternal mortality; furthermore, there were no deaths from sepsis in the mercurochrome series.

If we compare the morbidity rate of 11.5 per cent with that of 12.7 per cent, which represents the average morbidity for 1,662 deliveries prior to the use of mercurochrome, we find that the induction of labor following mercurochrome preparation is as free from morbidity as the average delivery without mercurochrome. From this it would appear that the preliminary use of mercurochrome renders the induction of labor a comparatively safe procedure.

The worst case of morbidity in spite of mercurochrome took place in a woman who had a marked vaginitis before delivery and developed a mild parametritis during her puerperium. In this case, elevation of temperature lasted seven days.

The causes of the morbidity in the mercurochrome group are analyzed in table 3.

TABLE 3.—*Analysis of the Causes of the Morbidity in the Mercurochrome Series* *

Cause	Days of Morbidity	Note
1. Respiratory.....	19	Pelvis negative throughout
2. Lochiometra....	2	
3. Lochiometra....	2	Membranes ruptured six days before admission
4. Lochiometra....	2	Mercurochrome not used until at the time of the induction
5. Undetermined..	3	Patient had eclampsia
6. Undetermined..	3	Protracted labor
7. Undetermined..	4	Toxemia
8. Parametritis....	7	Marked vaginitis before delivery
9. Hemorrhage....	Died	Placenta praevia, version and extraction; profuse hemorrhage following delivery

* If the morbidity in this table is corrected by omission of the case due to a respiratory infection, there remain seven patients who developed an elevation of temperature during their puerperium, and in only one case did the fever last more than four days. In three cases the cause has been attributed to lochiometra and in the others the actual cause was questioned, as it may have been due to a reaction from the labor or to the effects of the toxemia.

INDUCTION OF LABOR IN PRIMIPARAS

In the earlier series of cases, prior to the use of mercurochrome, only fourteen inductions were done on primiparas, while seventy-nine were performed on multiparas during the same period. It was always considered bad practice to perform an induction of labor on a primipara, and our morbidity statistics of 50 per cent and one death from infection bore out this contention.

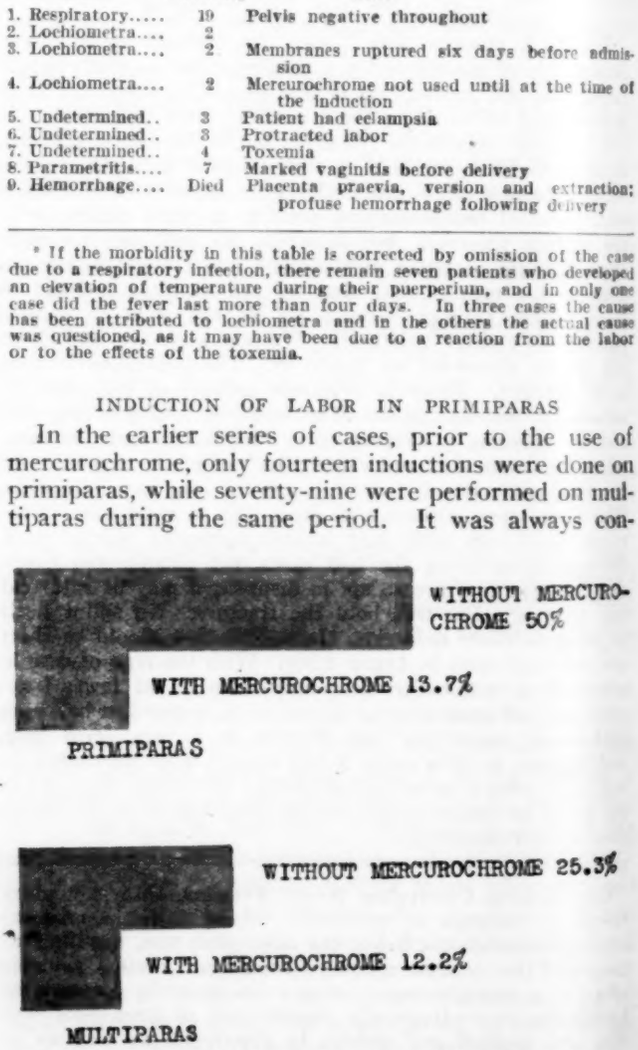

Chart 3.—Relation of morbidity to the parity of the mother.

With the use of mercurochrome, however, we started inducing labor in primiparas as well as in multiparas. Since the beginning of 1924, we have induced labor in

twenty-nine primiparas without a single death and with a gross morbidity of only 13.7 per cent, as shown in table 4.

In the two years 1921 and 1923 there were no records of the performance of this procedure. In 1924 there were but two inductions on primiparas in 1,258 deliveries. In 1925, when we were using mercurochrome, there were eight inductions in primiparas in 1,535

TABLE 4.—*Comparison of Morbidity in Primiparas and Multiparas, Respectively, With and Without Mercurochrome* *

	Cases	Morbidity	Percentage of Morbidity	Deaths
Without mercurochrome:				
Primiparas	14	7	50	1
Multiparas	79	20	25.3	7
With mercurochrome:				
Primiparas	29	4	13.7	0
Multiparas	49	5	10.2	1

* Without mercurochrome the morbidity in primiparas was double that in multiparas, while with the mercurochrome there was almost no difference in this respect.

deliveries, and in 1926, nineteen inductions in 1,799 deliveries. We performed more inductions on primiparas in 1926 alone than in the combined eight years before the use of mercurochrome. This fact in itself should prove our faith in mercurochrome as a vaginal antiseptic in obstetrics.

ANALYSIS OF INDICATIONS FOR INDUCTION

Sixty-three of the patients in whom labor was induced were treated for toxemia, with three maternal deaths, all in the nonmercurochrome group. Two of the deaths were due to toxemia; one, to a blood stream infection. Twenty-nine of the toxemic patients were delivered with the mercurochrome technic with a morbidity of 10.3 per cent, whereas the morbidity in the corresponding nonmercurochrome group was 20.5 per cent. There were twelve stillbirths and three infantile deaths, and eighteen of the babies were premature. The statistics with regard to the indications for induction, maternal mortality and infantile mortality and prematurity are given in table 5. In toxic cases there is a lowered resistance; therefore, any added measure that tends to protect the patient from infection should be recognized as valuable.

TABLE 5.—*Analysis of Indications for Induction of Labor, With a Study of the Maternal and Fetal Mortality* *

Indications	Cases	Maternal Deaths	Stillbirths	Fetal Deaths	Premature Births
Toxemia	63	3	12	3	35
Placenta praevia	37	3	19	9	25
Ablatio placentae	2	..	2	..	1
Uterine inertia	13	..	..	1	1
Elective	33	1	..	..	4
Contracted pelvis	4	1	2	..	..
Cervical dystocia	6	1	..	..	2
Prolapsed cord	1	..	1	..	1
Unclassified and miscellaneous	12	..	6	3	..
	171	9	42	16	69

* The high percentage of fetal mortality is due to the fact that such a large percentage of the infants were premature and that the condition for which the induction was done often accounted for the loss of the child.

Placenta praevia was the reason for the induction in thirty-seven cases, with three deaths due to hemorrhage and all the deaths occurring within a few hours after delivery. There were nineteen stillbirths, and nine babies died following delivery. Twenty of these thirty-seven babies were premature, and six of the stillbirths followed delivery by version.

EFFECT OF DURATION OF LABOR ON MORBIDITY

As shown in table 6, twenty-two of the patients had slight or irregular contractions before induction was commenced, and only ten had active contractions. In the primiparas, the average time elapsing from the induction to the onset of labor was three hours; in the multiparas, three hours and a half. The average length of time before the bag was expelled in the primiparas was eleven hours; in the multiparas, nine hours and a quarter. The duration after the expulsion of the bag averaged five and three-fourths hours in the primiparas; two hours and a quarter in the multiparas. The total duration of labor was sixteen hours in the primiparas and eight hours in the multiparas.

TABLE 6.—*Duration of Labor Before and After Induction* *

Before Induction	Primiparas	Multiparas	Total
No labor	87	103	140
Slight labor	4	18	22
Active labor	2	8	10

Average Duration of Labor Following Induction	Primiparas		Multiparas	
	Hours	Minutes	Hours	Minutes
Bag to labor	3	..	2	38
Bag in	11	3	9	17
Labor after bag	5	41	2	12
Total duration of labor	16	3	7	58

* The onset of labor after the induction was about the same in the primiparas as in the multiparas, but the labor following the induction was twice as long in the primiparas.

Six patients in the mercurochrome series had the bag reinserted, and the average time that the bag was left in the uterus was eighteen hours. Not one of these patients came within the morbidity group.

TABLE 7.—*Relation of Morbidity to the Time the Bag Was in the Uterus*

Cases		Average Length of Time the Bag Was in the Uterus	Percentage of Morbidity	Mortality
	Without Mercurochrome			
29	1- 5 hours	3.2 hours	27.5	3
34	5-10 hours	7.0 hours	17.6	2
14	10-15 hours	11.2 hours	35.9	2
16	15 hours	26.9 hours	43.7	1
93	Total	9.57 hours	29.0	8
	With Mercurochrome			
27	1- 5 hours	2.6 hours	22.2	1
19	5-10 hours	6.6 hours	5.2	0
13	10-15 hours	11.0 hours	15.4	0
19	15 hours	24.6 hours	0	0
78	Total	9.88 hours	11.5	1

Without mercurochrome, the percentage of morbidity increased steadily according to the time that the bag was left in the uterus. This becomes apparent on consulting table 7. When the average time was 3.2 hours per patient, the morbidity was 27.5 per cent; when it was 11.2 hours per patient, the morbidity was 35.9 per cent; and when it was 25.9 hours, the morbidity was 43.7 per cent.

With the use of mercurochrome, almost the reverse condition obtained; that is, the longer the bag was in the uterus, the lower was the morbidity. When the bag was in the uterus the average time of 2.6 hours per patient, the morbidity was 22.2 per cent; when it was eleven hours per patient, the morbidity was 15.4 per cent; and when it was 24.6 hours, the morbidity was nil. These remarkable results are illustrated graphically in figure 4.

RECTAL TUBE NO ADVANTAGE

In eighteen cases a rectal tube was inserted into the uterus before the use of the bag. In this group, the morbidity was 22.2 per cent, with one death. The effect of the rectal tube on the duration of labor is shown by comparing tables 6 and 8. Although this is a small group, the tables seem to show that the combined use of the rectal tube and bag does not shorten labor as compared with the use of the bag alone. When we consider the added risk from hemorrhage and infection, especially when mercurochrome is not employed, it is questionable whether the use of the rectal tube is advantageous.

TABLE 8.—*Duration of Labor with Bag Plus Rectal Tube*

	Primiparas		Multiparas	
	Hours	Minutes	Hours	Minutes
Bag to labor	3	31	6	33
Bag in	17	42	12	57
Labor after bag	1	20	1	11
Total duration of labor	15	31	7	34

Following the combined use of the rectal tube and bag, six of the patients in the mercurochrome group were delivered, with a morbidity of 16⅔ per cent; whereas twelve of the patients in the nonmercurochrome group were delivered, with a morbidity of 25 per cent. There were two cases in which the rectal tube alone failed and it was necessary to use a bag. In two cases in which the tube was inserted first, there was profuse hemorrhage; one of these patients died.

TECHNIC

On admission, the patient receives a careful preparation. The pubic hair is shaved and the perineum and surrounding field are cleansed with green soap and water. The external genitalia and surrounding area are sprayed with a 4 per cent solution of mercurochrome, and 3 drachms (12 cc.) of the same solution is instilled into the vagina.[2] This procedure is repeated every eight hours during labor and used in all antepartum cases, whether induction of labor is contemplated or not.

TABLE 9.—*Types of Presentation and Methods of Delivery*

Presentation		Delivery	
Vertex	145	Spontaneous	112
Breech	24	Version	27
Transverse	2	Forceps	31
		Cesarean section	1
Total	171	Total	171

At the time of the induction, which should not be less than an hour after the original instillation, the external preparation is repeated. At the same time, the vagina is filled with a 4 per cent solution of mercurochrome.

The cervix is located. If it is dilated sufficiently for the introduction of the bag, the latter is passed through the cervix and filled with a weak solution of mercurochrome. The cervix can usually be dilated manually until it admits the bag. When the bag is filled, the stem is tied and left protruding from the vagina. Another tape is tied just outside the vagina to indicate the amount of descent of the bag. If the bag comes down 2 or 3 inches, it is usually out of the cervix. After the stem has been tied, a hand sponge is inserted and the vagina again filled with mercurochrome.

If the cervix is dilated so as to admit two or more fingers, it is a good idea to catch the posterior lip with two fingers and make slight traction, at the same time allowing the stem of the bag to pass between the two fingers. These fingers thus occlude the cervix and insure the filling of the bag within the uterine cavity, not the vagina.

If labor does not follow within a few hours of the introduction of the bag, a 1 pound weight is fastened by a cord to the stem of the bag and dropped over the foot of the bed. This weight causes sufficient traction to hasten the dilatation of the cervix. The cord used should be of such material that it is easily broken, so as to avoid any injury to the cervix should the patient move suddenly.

Especially in primiparas, we prefer to use a small bag, because it dilates the cervix more readily. Then, if labor does not continue when this bag is expelled, a larger one may be employed. Before the second bag is inserted, it is better to rupture the membrane.

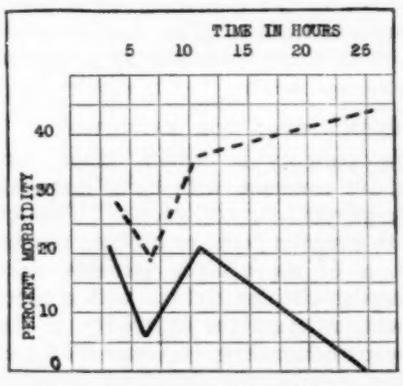

Chart 4.—Relation of the morbidity to the time the bag was in the uterus: solid line, with mercurochrome; broken line, without mercurochrome.

Colonic irrigations may be continued during the labor following the induction, and vaginal instillation should be repeated as during the early stages of labor. If the cord is prolapsed or the membranes have been ruptured for some time, or if the patient is potentially infected, the end of a catheter should be inserted into the uterus along with the bag. When the latter is filled, several ounces of a 1 per cent solution of mercurochrome should be instilled into the uterine cavity. If there is danger of pressure on the cord, sufficient saline solution should be instilled following the mercurochrome to replace the fluid already lost by rupture of the membrane, thus relieving pressure on the cord.

When the mercurochrome technic is employed, the danger of added infection from this procedure is practically negligible. I have employed it in several cases with excellent results.

CONCLUSIONS

1. The use of mercurochrome as a vaginal and intrauterine antiseptic is a valuable aid in reducing the morbidity and mortality following the induction of labor by means of a hydrostatic bag.

2. In ninety-three inductions of labor without mercurochrome, the morbidity was 29 per cent; in seventy-eight inductions with mercurochrome, it was 11.5 per cent.

3. By the use of mercurochrome, the morbidity in cases with toxemia was reduced from 20.5 to 10.3 per cent.

4. In thirty-eight cases of placenta praevia delivery, twenty-one of which were in the mercurochrome series, there was not a single death from infection.

2. I am now using an asepto vaginal syringe, which was made for me by Becton, Dickinson & Co., for the instillation of mercurochrome. With this syringe the mercurochrome comes in contact with the entire vaginal and cervical mucosa.

5. Without mercurochrome, the morbidity rate increased with the time the bag was in the uterus. In the mercurochrome group, on the other hand, the reverse was true. The longer the bag was in the uterus, the lower was the morbidity.

6. With the mercurochrome technic, the induction of labor is as safe in primiparas as in multiparas. Without mercurochrome, on the other hand, the morbidity following induction was twice as great in primiparas as in multiparas.

NOTE.—Since this paper was written, twenty additional patients have been delivered following the induction of labor without any morbidity. This makes ninety-eight cases in the mercurochrome group with an uncorrected morbidity of 9 per cent and an average days morbidity of 0.45. One of these patients had the bag in the uterus a total of sixty-nine hours and had an afebrile puerperium.

In nine of the twenty patients, of whom two were eclamptic, induction was done for toxemia; in four, for placenta praevia; in one, for ablatio placentae, and seven of the inductions were elective.

494 First Street.

Special Article

THE INFLUENZA EPIDEMIC OF 1918: II

PREVENTIVE MEASURES

EDWIN O. JORDAN

CHICAGO

(Continued from page 1606)

[EDITORIAL NOTE.—The articles in this series are chapters from a book by Edwin O. Jordan which is being published by the American Medical Association Press assisted by a grant from the Committe on Scientific Research. The book will soon be ready for distribution.]

A. ISOLATION AND QUARANTINE

It was shown in the 1890 pandemic, and reaffirmed by universal experience in 1918, that influenza is spread by human agency (p. 257). It follows that in pandemic times the prevention of contact with infected human beings affords protection against infection. This is illustrated by the experience of many institutions in which a more or less rigorous quarantine prevented the introduction of influenza at a time when the community round about was suffering severely. The advent of influenza in the large state institutions in New York, regardless of their geographic situation, was considerably retarded, presumably because of relative isolation. "The first death in them certified as due to influenza occurred on October 10, or about twenty-three days after the epidemic had already definitely begun in the rest of the state" (Eichel 1923).

At the Lakeville State Sanatorium for Tuberculosis in Massachusetts none of the patients or employees living on the premises had the disease in the 1918 September-October wave.[131] Leaves of absence for patients were completely stopped at this time, visitors were excluded from the institution and patients were advised to keep as far as practicable from each other and from all other individuals. Employees were given the same advice but they went and came as they would. When these precautions were discontinued later in the winter, two patients came back from leaves of absence with frank cases of influenza and in a few days about thirty cases developed in the sanatorium. The protection afforded by isolation in such institutions has been noted elsewhere. As pointed out in the chapter on tuberculosis and influenza (p. 305), several large sanatoriums for consumptives in this country where similar precautions were practiced, escaped without a single case of influenza. At the Western Pennsylvania Institution for the Blind in Pittsburgh, quarantine measures were put in force and the usual week-end trips home discontinued, and although the school was in session from September 24 to November 30, and was in a district where influenza was prevalent, there was not a single case of influenza in the school. After the children had been home for the Thanksgiving holiday, the first cases of influenza appeared (Johnston 1919).

Bland (1919) has recorded a remarkable example of the efficacy of isolation:

> At the outbreak of the present epidemic, twenty pregnant women were being cared for in the Maternity Department of the Woman's College Hospital [Philadelphia]. These women were isolated, supplied with special nurses and visiting was absolutely tabooed. Not one of the patients contracted the disease.

Gouzien (1920) related a striking instance of the exemption of a Madagascar family which although in a heavily infected village resolved to avoid all contact with others during the epidemic.

It is said that quarantine measures kept influenza completely out of two towns, Fairbanks and Nenana, Alaska:

> According to a statement in the Alaska Railroad Record, the official publication of the Alaska Engineering Commission, every person in each city had to wear on hat or coat a blue ribbon lettered "Health Department," which was purchased from the department for a fee of $1, or $2 for a duplicate in case of loss. Persons failing to obtain and wear the ribbon were subject to arrest and quarantine confinement. Civilian sentries guarded all the trails, and persons entering either city were detained five days in quarantine, being then permitted to proceed if no symptoms of the disease had developed. The fees went toward the expense of guarding the trails and quarantining travelers (*Engineering News-Record* **82**:787, 1919).

Lake City, Colorado, had a similar successful experience with quarantine measures. Strict rules were put in force requiring five days' quarantine of all persons entering or leaving Hinsdale County or Lake City, with the result, it is said, that not a case of influenza developed within the limits of the district.[132]

Less rigorous measures for preventing contact of the well with the sick seem to have been successful in many instances in keeping influenza at a low point:

> Medical inspection and careful supervision are given credit for preventing extensive influenza outbreaks in five dam-constructing camps housing some 400 persons each at the Miami Valley Flood Protection Works. Only a few scattered cases of influenza developed (*Engineering News-Record* **82**:197, 1919).

In the description of an attempt to prevent influenza among the men of the students' army training corps at Harvard, stress is laid on the importance of quarantine as a protective measure (Minot and Loeb 1918). The authors are "inclined to believe that if strict quarantine and preventive measures had been employed for all the men when the first men began to live in dormitories, there probably would have been fewer cases among this group of men."

131. Personal communication to the author from Dr. Sumner Coolidge, Superintendent.

132. Personal communication from Dr. B. F. Cummings, Health Officer, to Prof. W. G. Sackett, Fort Collins, Colorado.

In Chicago, in one section of the students' army training corps (685 men), in which special care was taken to detect and immediately segregate cases of incipient illness, the influenza attack rate was very small (39 per thousand), as contrasted with another section (234 men; 398 per thousand), in which more or less close contact between sick and well members was maintained for several days (Jordan, Reed and Fink 1919).

Similar efforts in other places to detect by daily inspection and to isolate every suspicious case appear to have been equally successful in keeping influenza at a low level. In a unit of about 4,500 young men at Princeton University, during the 1918 pandemic (J. M. Taylor 1920), there were "few cases of influenza, fewer still of pneumonia and no deaths." The early isolation of influenza cases is believed to have been an important factor in limiting the 1920 outbreak at Fort Sheridan (Kremers 1920).

The effect of minimizing group gatherings may also be inferred perhaps from the experience at Camp Admiral Oman near Newport, R. I., in which segregation of a group of men is thought to have aided materially in checking an epidemic of influenza (Carroll 1918).

Attention has been called by Heiser (1918) to the significance of life in barracks as a means for furthering the spread of respiratory diseases. If close association favors, spacing and isolation should hinder the transmission of influenza. The same conclusion is reached by D. C. Howard and Love (1920), who point out that in France, in commands of the Service of Supply where troops were housed in barrack with a large number of men to a single room, the epidemic ran much the same course with high mortality as it did in cantonments in the United States, whereas among the troops at the front, the billeted men were more or less isolated in small groups and spent a large part of their time in the open. Whatever the cause, it is of great interest that the annual death rate from disease was about five times as high in the week of greatest mortality among the troops in the United States (206.04, week ending October 11) as among the American troops in France (44.7, week ending October 18).

Observers in other countries also have reported observations bearing on the importance of isolation in preventing the spread of influenza. A negative conclusion as to the value of isolation is reached by Cumpston (1919), who, in a study of ship epidemics, while admitting that in some instances isolation properly carried out may have some appreciable effect of a minor kind, considers that immediate isolation of the infectious sick on vessels in the Australian coastal service failed altogether to control epidemics:

> In every one of the vessels now under consideration, a daily thermometer parade was held, and every person showing any rise of temperature was at once removed for observation. In addition, any person reporting sick was immediately removed. This was most thoroughly and efficiently carried out, and it can sefely be asserted that the sick were removed in every case immediately on discovery. No better test of the efficiency of immediate isolation of the infectious sick could well be devised. . . . In spite of this method applied from the first day, *Ooma* showed 89 per cent of personnel infected, *Pacifique*, 64 per cent of her personnel, *Mourilyan*, 46 per cent and *Dimboola*, 30 per cent.

Ehrenberg (1919) discusses the possible reasons why in the Falun hospital 90 per cent of the personnel developed influenza during a period when a total of 143 influenza patients were being treated, while none of the other patients in the hospital contracted the disease. Ehrenberg thinks it plausible to assume that the presence or absence of repeated opportunities for infection is the probable decisive factor. Jensen (1918) had every person with influenza on a small island with 750 inhabitants strictly isolated from the first symptoms, the attendants wearing overgarments and masks. There were in all only twelve cases, ten of which were imported, so that practically no spread of the infection occurred.

Copeman (1920) describes the complete escape from infection during October and November, 1918, of the 163 pupils of a boarding school at Saffron Walden near Cambridge, England. This exception was attributed to the fact that the boarders were not allowed to go into the town during the term from September 17 to December 20. When the protection was relaxed in the following term, nearly the whole membership of the school was affected.

It is quite safe to assert that perfect isolation of an individual or group during an influenza epidemic constitutes a complete protection against the disease. Indeed, it is possible to go further and to maintain that where, as in most cases, it is not practicable to avoid outside human contact altogether, reduction of such contact to a necessary minimum confers some degree of protection, although naturally this is never absolute. It is clear that a number of factors, some of them unknown, enter into the causation of epidemic influenza, but the evidence seems convincing that on the one side seclusion and detachment and on the other general mingling with others, especially if the mingling involves close personal association at meals or in working quarters, are very important determining influences.

Probably the most persistent and elaborate attempt ever made to use quarantine measures for preventing the introduction of influenza was made by the Commonwealth of Australia (Cumpston 1919). The maritime quarantine operations lasted from October, 1918, to May, 1919. During that time there were dealt with 149 uninfected vessels with 7,075 passengers and 7,941 crew, and seventy-nine infected vessels with 2,795 patients, 48,072 passengers and 10,456 crew. In no instance throughout this period was there any evidence of a spread of infection by a demonstrable chain from persons or vessels in quarantine to the shore population. At the time that these defensive measures were in force, New Zealand and South Africa were suffering from an extremely severe type of influenza, fully as virulent as that which swept over the United States. When the pandemic in most parts of the world was at its height—October, November and December—there was no extensive or violent epidemic in any state of Australia. Cumpston puts it as follows: "It may be stated definitely that, during the three months, maritime quarantine had the effect of holding at the sea frontiers an intensely virulent and intensely infectious form of influenza which not only caused disastrous epidemics in New Zealand and South Africa, but actually arrived at the maritime frontiers of Australia and caused serious epidemics amongst vessels detained in quarantine."

On the other hand, influenza actually did appear in Melbourne in the middle of January, 1919, and was followed by more or less extensive epidemics in Victoria and the other Australian states. This is interpreted by Cumpston (1919) as the evolution of an infection already present in Australia to a stage manifesting greater virulence and infectivity, but not attaining that intense degree of virulence and infectivity seen in the

closing quarter of 1918 in every country in the world, except Australia. However this may be, it seems to Cumpston a fair assumption that the exceedingly severe type of influenza was kept out of Australia by maritime quarantine measures for several months, perhaps until the type had been modified in some way, or climatic conditions were more favorable, or some other unknown factor became operative. It is possible that without such quarantine Australia might have suffered in the fall of 1918 as severely as the neighboring country of New Zealand. When Australia was finally affected from January to June, 1919, the death rate reached a maximum of only 33.5 in New South Wales, and 18.7 in Victoria.

Whether or not the striking exemption of Australia from influenza in the autumn of 1918 was due to maritime quarantine, there is no doubt that vessels were the frequent bearers of the infection in this part of the Pacific. This is shown by the history of the small trading steamer *Talune:*

> This vessel left New Zealand in the last week in October when influenza was well established in New Zealand. She arrived at Suva on the 4th of November, 1918, and on arrival had on board some cases of influenza. Some passengers were landed, three of whom developed influenza after landing. The first known European case of influenza, apart from these passengers, was seen on the eighth of November, the second on November 10. Thence the epidemic spread rapidly through Fiji. The vessel left for Tonga and Samoa, taking a gang of Fijian laborers to work the ship.
>
> The vessel called at Samoa and then proceeded to Tonga, where she arrived on the twelfth of November, no restrictions being placed on the landing of passengers or cargo. A day or two after the steamer left for Suva cases of influenza began to make their appearance, and the epidemic spread through the island until practically the whole native population had been stricken. At Samoa the same story was told. This one vessel infected three island groups, and produced a scourging epidemic with an appalling mortality. Concerning the outbreak in Samoa and Tonga, Surgeon Grey—in command of the Medical Relief Expedition sent from Australia—reported that there were 7,264 deaths in Samoa amongst a total population of 36,405, or 20 per cent of the population. Tonga got off comparatively lightly with a mortality of only 7 per cent of the entire population (Cumpston 1919, p. 60).

The experience of New Caledonia, as related by Peltier (1922), was even more striking than that of Australia (cf. also, Abbatucci 1926). Owing apparently to quarantine measures, influenza was kept entirely out of that island until July, 1921, when it was brought in by a vessel from Sydney. The influenza virus so introduced—if the infection was true influenza—ran a much more benign course than did the 1918 influenza in other islands of the South Seas. Owing to difficulties of communication, amounting to practical quarantine, the northern part of New Caledonia remained free.

In Iceland, the disease is said to have been confined by quarantine measures to the southern and western parts of the island (Matthiason 1920). Relaxation of quarantine measures after four months led to an outbreak of "children's catarrh" in a district previously exempt. It is considered that if this was influenza it was a "weakened form."

B. CLOSURE OF SCHOOLS AND PROHIBITION OF PUBLIC GATHERINGS

The facts set forth in the preceding section regarding the part played by human intercourse in the spread of influenza have been used as an argument for the use of special measures for restricting contact during an epidemic.

Closing schools to prevent the spread of infections has been for some time out of favor with sanitarians. The opportunity afforded for systematic inspection and supervision renders the school ordinarily a safer place for the average child than the unsupervised playground or the street. There is general agreement among authorities on school hygiene that, unless in exceptional circumstances, the schools should remain open even in times of epidemic prevalence. These exceptional circumstances, however, in the opinion of some observers, existed in certain cities during the 1918 influenza epidemic. The director of medical inspection of the Boston public schools thus portrays the situation in that city (Devine 1919):

> Under certain conditions, which rarely occur, the closing of schools is advisable. This was apparent in the late epidemic of influenza. Two or three weeks after the visitation of this malady in Boston last fall, the city was in a demoralized condition. Thousands of pupils were absent from school, either from illness (many with influenza) or safeguarded at home. Over 200 teachers were absent, some ill from the disease, some from fear, and others on account of illness or bereavement in their homes. Medical inspectors, overworked, were affected by the disease in the same proportion as other members of the community; perhaps 20 per cent of the nurses in Boston were on the sick list, and thousands of families were afflicted by the disease and quite a few by death.
>
> Owing to this condition of affairs and a panic stricken community, the director of medical inspection recommended the closure of schools. It is the first time in his experience as a school physician, or general practitioner, that he has seen the need of such action. . . .

This was evidently an extreme case. There is direct evidence that in some other localities schools played little or no part in furthering the spread of influenza. In a Chicago school studied by Jordan, Reed and Fink (1919), more cases of influenza developed among the pupils following the Thanksgiving holidays than occurred during the periods that the schools were in session. It is particularly interesting that throughout the influenza epidemic no explosive outbreak occurred in any individual grade in these schools. It appeared from all the data gathered that the schools did not serve in any marked degree as distributing points for influenza infection.

A similar course of events was noted by Zander (1919 b), who found that in a large school in Stockholm the school morbidity closely paralleled the general morbidity. Zander believes that influenza is not contagious during the first day, and consequently expresses the opinion that if children taken ill are sent home at once there is no need to close the school. He considers that the school plays no part at all in spreading influenza.

Winslow and Rogers (1920) point out that in Connecticut the three largest cities—Bridgeport, Hartford and New Haven—followed the policy of keeping the schools open under close medical supervision, and had death rates lower than cities like New London and Waterbury, which closed their schools. School closure, however, as these authors note, is most likely to be resorted to when the outbreak is particularly severe. In point of fact, comparative data of this sort throw little light on the problem of the effect of school closure.

Whatever may be the force of the argument that in times of great influenza prevalence closing city schools has a beneficial effect on the public morale, there is no convincing evidence that this procedure has any effect on the spread of the disease. It is conceivable that

while closing city schools may do little good owing to the numerous other points of contact, closing country schools might prove of real value. In the Kelleys Island study of C. Armstrong and Hopkins (1921), strong reasons are given for believing that the school was instrumental in spreading the disease in a small and exceptionally isolated community. In most parts of the world, however, rural isolation is hardly complete enough to render school closing significant.

Prohibition of public gatherings in churches, theaters, moving picture shows and the like has much to recommend it theoretically (cf. e. g., Jeanneret—Minkine 1918). But although it is axiomatic that close contact favors the transmission of infection, it is doubtful how far forbidding public assemblages in cities really protects the community. The possibilities of contact in public conveyances, elevators, stores and factories remain so numerous that one may seriously question the practical value of preventing contact at certain points while it is still taking place at many other points among the same individuals. In the nature of the case, direct evidence as to the value of church closing, theater closing and the like is not easy to come at, and the opinions of health officials during the epidemic were considerably at variance.[133] The conclusion seems fairly justified that in large communities little if anything is to be gained by such prohibitions unless, indeed, the situation is so serious that the community will accept very great restrictions of its ordinary activities. In smaller towns and in rural districts where general group contacts are not very numerous, restrictive measures may possibly be of service in diminishing the spread or seriousness of infection. There can be little doubt that the individual who limits his points of contact with others to a minimum during an influenza epidemic will in some degree lessen his own chances of becoming infected.

C. FACE MASKS

The use of a face mask to protect the wearer against air-borne infections has the sanction of ancient usage. In the seventeenth century, physicians delegated to treat the plague "wore a strange prophylactic garb, consisting of a long red or black gown of smooth material, often Morocco or Cordovan leather, with leather gauntlets, leather masks having glass-covered openings for the eyes and a long beak or snout, filled with antiseptic or fumigator, for the nose" (Garrison 1914). In more recent outbreaks of pneumonic plague the use of face masks has been considered an effective measure of protection. Broquet (1920) and others who have had experience with plague pneumonia urge the application to influenza of the methods of face protection found useful in plague (cf., also, Violle 1918).

While it would probably be more effectual to have the patient wear a mask, it would hardly be humane to add to the respiratory difficulties under which he is suffering, and in practice mask-wearing has been usually confined to those in contact with the sick.

The importance of a gauze face mask as a protection against any infections presumably communicated by mouth spray was brought into special prominence, in 1918, by the experimental work of Weaver (1918 a, b) and others (Capps 1918; Dannenberg 1918). The demonstration that face masks prevent the dissemination of certain pathogenic bacteria, such as the diphtheria bacillus, encouraged their early application to influenza. A number of observers have reported that the use of face masks was of distinct benefit in preventing the spread of influenza, particularly among those directly exposed (Harrington 1918; E. Lenz 1918; Jeanneret—Minkine 1918; Cumpston 1919; Vincent 1923; Josefson 1920; Hurley 1919). Others were more dubious (cf. e. g Kellogg 1919; Sahli 1919).

There is no doubt that the varying opinions expressed regarding the prophylactic value of face masks in influenza depend in part on variations in the material and mode of construction of the mask (cf. Haller and Colwell 1918; Doust and Lyon 1918). Improperly constructed masks cannot be expected to confer protection. The masks used by Weaver as the result of his long experience at the Durand Hospital for Infectious Diseases, Chicago, are made of three layers of absorbent gauze with a mesh of 44 by 40. The nurses were instructed to wear two superimposed masks, making six layers of gauze, when caring for cases of virulent infection in which secretions were abundant.

It is certain that not all the face masks used in the attempt to protect against influenza were properly made. It is plain also that the methods and faithfulness of those wearing and handling the masks must influence profoundly the degree of protection obtained from their use. Face masks are uncomfortable and inconvenient, as any one who has worn them can testify. The extent of discipline, self-imposed or other, maintained by the wearer of masks, is evidently a factor of great weight in attempting to gage the masks' efficacy in preventing infection. It should not be overlooked that the ordinary gauze masks for mouth and nostrils do not protect the entire surface exposed to mouth spray. The importance of infection through the conjunctiva, a well known portal of entry, has been especially emphasized by Maxcy (1919) who has pointed out that conjunctivitis is one of the early symptoms of many respiratory infections.

Variations and limitations of this kind make it peculiarly difficult to evaluate the rôle played by general mask wearing during the epidemic of influenza. It may be reasonably assumed that the use of properly constructed masks under controlled conditions in hospitals had the same protective value against influenza as against other diseases presumably spread by mouth spray. But the effect of mask wearing throughout the general community is not easy to determine. In some communities the wearing of masks was a common, though voluntary, practice; in others, an attempt was made by the municipal authorities to make it compulsory. Observations that influenza declined after a compulsory masking ordinance had been put in force have been adduced as evidence of success. Occurrences of this character can hardly be relied on as convincing proof, since masking on a generous scale is rarely resorted to until influenza cases have become so numerous that a natural decline with or without masks is to be expected. In point of fact, the character of the influenza curve does not seem to have been materially different in those cities in which masking was for a time largely practiced (e. g., San Francisco[134]) and those in which mask wearing was of trifling extent. A discussion at the meeting of the American Public Health Association in December, 1918, showed that most health officers were not convinced of the success of mask wearing by the general public.[135] In the 1920 epidemic

133. See discussion at the meeting of the American Public Health Association, J. A. M. A. **71**: 2097-2100 (Dec. 21), 2173-2177 (Dec. 28) 1918.

134. At the height of the influenza epidemic the wearing of masks was compulsory!

135. J. A. M. A. **71**: 2173 (Dec. 28) 1918; **72**: 434 (Feb. 8) 1919.

masks were not generally worn, and the mode and degree of epidemic spread did not seem to be essentially modified by the failure to use this suppositious prophylactic measure.

The conclusion seems warranted that those attending or examining influenza patients may obtain some measure of protection by wearing properly constructed face masks and eye goggles. On the other hand, the practical difficulties in the way of mask wearing by the general public seem insuperable and render this measure one for individual rather than general prophylaxis.

D. PREVENTIVE INFLUENCE OF CERTAIN GASES

The use of germicidal gases to destroy microbes known or supposed to be located in the upper respiratory tract has been often suggested, both as a prophylactic and a therapeutic method of controlling certain infections. Consumptive patients were apparently treated in this way early in the nineteenth century (O'Malley 1924; Gilchrist 1925). In the 1918 influenza pandemic, interest in this procedure was stimulated by the statement that workers engaged in occupations that entailed the inhalation of certain gases remained exempt from infection. It has been shown elsewhere on how slight a foundation this belief rests. Nevertheless, a number of attempts have been made to use gas inhalations, notably chlorine, in the prevention and treatment of influenza and other respiratory infections.

The amount of chlorine used in these observations has been usually small (e. g., 0.015 mg. per liter of air —Vedder and Sawyer 1924; Gilchrist 1925; M. B. Patterson 1925). Jones and Garofalo (1925) noted that in cool dry weather as much as 0.02 mg. could be used. Inhalation has been usually practiced for one hour or longer in especially constructed chambers. The observers cited were all impressed with the favorable results obtained in treating colds and similar disorders by this method. Hale 1923), also, is an advocate of this procedure, although his descriptions lack exact data as to gas concentration and certain other factors of importance. Diehl (1925), who treated several hundred students with colds at the University of Minnesota, states that more cures were effected by the chlorine than by medical treatment but that the "margin of benefit" was small. The difference was more noticeable after one than after three days.

Work on this subject at the Army Medical Center, Washington, has been reported by Nichols, Simmons and Hitchens (1925). The strength of chlorine used did not diminish in any significant degree the bacterial flora of the mucous membranes of the upper air passages. *Serratia prodigiosus* when sprayed on these membranes was not killed. This is probably because the chlorine is largely neutralized by the organic matter.

On the basis of these and other bacteriologic observations, recent advocates of chlorine treatment have been inclined to attribute their clinical results to the production of a "defensive exudate," or other indirect action rather than to the bactericidal action of chlorine. It cannot be said, however, that the chlorine treatment of influenza or of colds has led to clinical amelioration to a degree that warrants the general adoption of the method.

Inhalation of zinc sulphate solution in steam chambers did not give encouraging results when used at certain Australian quarantine stations (Cumpston 1919).

(To be continued)

Physical Therapy

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION.

KLAIBER SUBAQUEOUS INTESTINAL BATH APPARATUS NOT ACCEPTABLE

Report of the Council on Physical Therapy

The following report has been approved by the Council on Physical Therapy of the American Medical Association.

H. J. HOLMQUEST, Secretary.

The Klaiber Subaqueous Intestinal Bath Apparatus, submitted by The Suba Intestinal Bath Apparatus Corporation, New York, is stated to be a device for irrigating the colon while the patient is immersed in water with the aim thereby of increasing abdominal pressure to compensate in part for the increased pressure within the colon. The apparatus is apparently carefully made for specific purposes and the principle of operation is novel and suggests therapeutic advantages. The results alleged to be achieved seem to be referable, at best, to an improved form of colonic irrigation. It appears doubtful whether this method could accomplish so much more than existing measures of the same general nature as to justify the claims made for it. The therapeutic claims made for the apparatus and method in the advertising matter submitted to the Council are wide but not discriminating. The reports from the clinics mentioned in this material as to the success attained with the apparatus are uncritical. There are some wholly unscientific statements, such as that referring to the relief of dyspnea in pulmonary disease by the absorption of salts and oxygen from the irrigating solution of "oxygen containing blood salt solution." Assuming that the apparatus and method have inherent value, the circular matter submitted gives inadequate instructions for proper use and also inadequate exposition of the possible dangers and limitations.

The Council declares the Klaiber Subaqueous Intestinal Bath Apparatus inadmissible to the list of devices for physical therapy that are accepted because (1) sufficient evidence has not been presented to show that this complicated apparatus will accomplish more than simple existing devices of the same general nature; (2) because therapeutic claims not well warranted and unscientific statements are made in the descriptive circular; and (3) because adequate instruction in the proper use of the apparatus and method and adequate exposition of the possible dangers and limitations are not given.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

EPHEDRINE HYDROCHLORIDE (See THE JOURNAL, March 19, 1927, p. 925).

Ephedrine Hydrochloride-Pemco.—A brand of ephedrine hydrochloride-N. N. R.

Prophylacto Manufacturing Co., Chicago, distributor. No U. S. patent or trademark.

EPHEDRINE SULPHATE (See THE JOURNAL, March 19, 1927, p. 925).

Ephedrine Sulphate-P. D. & Co.—A brand of ephedrine sulphate-N. N. R.

Manufactured by Parke, Davis & Company, Detroit. No U. S. patent or trademark.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, NOVEMBER 12, 1927

FIBROSIS IN TUBERCULOSIS

The formation and fate of the tubercles that are so characteristic of infection with tuberculosis play an important part in the resistance to the progress of the disease. The struggle between the tissues and the tubercle bacillus for mastery is essentially a local one. If the organism of the host is successful in effectually localizing the invaders, a victory over the disease is likely to be won. For this reason alone, if no other scientific interest were attached to it, the study of the organization and conquest of the tubercle is of great importance. The defense of the body against infection is not limited to a neutralization or detoxication of noxious products such as may occur when inorganic or organic poisons are introduced into the system. Cells and tissues may assume a more direct rôle in the protective reactions. Serum bacteriolysis and bacterial destruction by phagocytosis often give effective aid.

In the tubercle, however, the production of fibrous tissue may become dominant in the control of the infection and the healing of the affected parts. The importance of fibrosis has been strikingly portrayed in a recent monograph.[1] As the connective tissue cells lay down more and more collagen in their peripheries, the intercellular tissue spaces are encroached on and finally closed, thereby obliterating the only channels of communication between the interior of the lesion and the surrounding tissues. Tubercle bacilli and their soluble products can no longer readily escape from the focus of infection; extension of the infection can no longer take place, and absorption of tuberculin-like bodies can no longer poison the system.

In his investigations at Yale University on the development of fibrous connective tissue, Baitsell[2] has championed the somewhat novel view that it may arise out of an intercellular secretion which constitutes its immediate derivation. The genesis of connective tissue fibers is pictured as the gradual transformation of the more or less homogeneous, secreted ground substance into a definite fibrous tissue. According to Baitsell this process appears, from the morphologic standpoint at least, to be identical with that which takes place under certain conditions in the transformation of the fibrin of a blood clot into a fibrous tissue, as he has also shown. The same picture is seen in the development of fibrous tissues in tuberculous infections.[3] At points where the bacilli congregate in a tissue, an exudate arises. When first noted this appears, for the most part, quite homogeneous or with a fine fibrillation. The later stages show gradual stages in the direct transformation of this material into a typical fibrous tissue, together with the formation of heavy bundles of wavy fibers which stain beautifully and typically. This fibrous tissue encapsulates and infiltrates the tubercles which have been forming in the infected areas, and usually develops in such great abundance throughout the infected areas, as noted, that the masses involved are largely transformed into fibrous tissue. Such a transformation is not dependent on direct cellular connections. It is representative of a unique morphologic change of a nature that has not before been adequately realized in the study of pathology and the processes of immunity.

1. Baldwin, Petroff and Gardner: Tuberculosis, Philadelphia, Lea and Febiger, 1927.
2. Baitsell, G. A.: Proc. Nat. Acad. Sc. **6**: 77, 1920; Am. J. Anat. **28**: 431, 1921.
3. Baitsell, G. A.: Additional Evidence as to the Intercellular Formation of Connective Tissue, Proc. Nat. Acad. Sc. **13**: 481 (July 15) 1927.

CEREALS AND RICKETS

The importance of various components of the diet other than the familiar organic foodstuffs is now generally recognized. Lack of any essential may bring about nutritive disaster. The so-called law of minimum comes into play. Even amid great abundance of most of the required nutrients, health cannot be preserved or gains made beyond what the availability of the least abundant factor will permit. Sugar will not supplant all the protein; sodium cannot replace the minimum requirement of calcium.

Rickets and analogous conditions are at present believed to be the expression of dietary deficiencies. These may consist of a deficiency of calcium, a deficiency of phosphorus, a disproportionality between calcium and phosphorus, or a deficiency of vitamin D, a highly active compound owing its physiologic properties to ultraviolet radiation. A diet abounding in cereals and not adequately supplemented so as to provide those nutritive factors, notably calcium, vitamin D, and in some instances phosphorus also, is demonstrably predisposing to rickets. This is no longer difficult to understand. Under ordinary conditions none of our cereal grains, for example, contain a sufficiency of calcium for adult man when they are consumed as the sole article of food. Only a liberal additional consumption of milk, eggs or vegetables corrects this difficulty. Polished rice, pearl barley, wheat farina and patent wheat flour are notoriously deficient, and of these polished rice and patent flour are deficient in

phosphorus as well. All intelligent menu making and dietary formulation recognizes this and aims to provide against any shortcoming in the entire regimen.

Some time ago Edward Mellanby [1] of the University of Sheffield, England, sponsored a widely circulated report that represented certain extensively consumed cereal foods as potential menaces to health in a positive rather than a negative way. It was not alone the lack of certain essentials that was assailed. In his own words, there is present in the one cereal tested, oatmeal, a chemical grouping which, after digestion and absorption of the grain, is capable of interfering with bone calcification. After many attempts had been made to explain this action in terms of known constituents of cereals and to find out the nature of the causative agent or agents, some evidence has finally been obtained, Mellanby states, which suggests that a substance in oatmeal which interferes with the laying down of calcium in bones is associated with the fatty acids. He adds that white flour contains much less calcium and phosphorus than oatmeal, but results in better bone formation, when the antirachitic vitamin intake is deficient, because it contains much less of the substance or substances interfering with ossification. There is herein more than an implication that cereals actually work against the conservation of ingested bone-forming elements. Speaking of conditions in England, Mellanby went so far as to assert that, apart from extreme malnutrition, it would appear not improbable that where the average diet is either deficient in or contains a borderline quantity of antirachitic vitamin and calcium, and where sunshine is negligible, the ingestion of oatmeal during pregnancy and lactation of women, and in growing children, does much harm.

These conclusions received widespread notice when they were broadcast through the press. They impugn the dietary value and even the hygienic safety of a cereal reputed as wholesome among generations of persons not prepared to find a "toxamine" in one of their favorite foods. Fortunately, the Mellanby report is not compelling. Steenbock, Black and Thomas [2] of the University of Wisconsin, experts in the investigation of rickets, cannot substantiate the British observations. The American group has been unable to demonstrate that rolled oats is especially rickets producing. In fact, rolled oats has shown itself to be on the average somewhat less rickets producing than maize in both dog and rat experiments, but somewhat more so than wheat in the trials with rats. All the tests carried out with dogs, which are exceedingly susceptible to rickets, show that all cereals are so decidedly rickets producing that a large number of trials with carefully executed controls are necessary to demonstrate which is the worst. In any case, Steenbock adds, the defect of the cereals can be remedied by the judicious supplemental use of foods high in calcium—and also high in phosphorus in special instances—and by the treatment of the cereal with ultraviolet radiations. By the latter means vitamin D can be produced in abundance, so that even without mineral additions a rachitic condition can be much improved.

1. Mellanby, Edward: Experimental Rickets: The Effect of Cereals and Their Interaction with Other Factors of Diet and Environment in Producing Rickets, Medical Research Council, Special Report Series, number 93, 1925.
2. Steenbock, H.; Black, A., and Thomas, B. H.: Cereals and Rickets, Indust. & Engin. Chem. **19**: 906 (Aug.) 1927.

ACCLIMATIZATION TO HIGH ALTITUDES

Altitude has been defined by Schneider [1] as a climatic condition that causes physiologic changes which affect our bodily comforts. Among its variables are lowered atmospheric pressure, partial pressure of oxygen, temperature and humidity, and increased intensity of sunshine and electrical conditions. While in the past the effects of altitude have been attributed to one or more of these variables, it is today recognized, as Schneider reminds us, that the controlling element in the physiologic reactions is the diminished partial pressure of oxygen and the consequent imperfect aeration of the arterial blood. The theory that oxygen want is the essential cause of the malaise experienced under conditions of lowered barometric pressure was experimentally supported by the French physiologist Paul Bert half a century ago; [2] but it did not win the universal acceptance it now enjoys without prolonged controversy. The current view has recently been summarized in the statement that the low oxygen pressure produces its effect owing to the fact that it is insufficient to produce oxygenation of the blood to a normal extent in the lungs, so that the oxygen pressure, or diffusion pressure of oxygen, in the blood passing through the central nervous system is abnormally low. Mountain sickness, aviator's disease (mal des aviateurs), and the distress sometimes experienced by balloonists accordingly find their physiologic explanation.

Sojourn at high altitudes soon leads to compensatory reactions that tend to avert or minimize the distress that would ordinarily occur. Acclimatization to high altitudes represents adjustment to an abnormally low partial pressure of oxygen in the air breathed. According to Schneider the responses of the organism to the anoxemia of altitude involve the respiration, blood and circulation, and are: a fall in the alveolar carbon dioxide pressure and a rise in the alveolar oxygen pressure, which are associated with an increase in the ventilation of the lungs; an increase in the percentage and the total amount of hemoglobin in the blood; a modification in the proportion of acids and bases in the blood, and an increase in the rate of heart beat, with which are also associated other circulatory changes. Each of these has been considered to be in the nature of a compensation, so that the tissues may

1. Schneider, E. C.: Physiological Effects of Altitude, Physiol. Rev. **1**: 631 (Oct.) 1921.
2. Bert, Paul: La pression barométrique, Paris, 1878.

be more adequately supplied with oxygen. The respiratory changes raise the oxygen pressure to which the blood is exposed; the increase in hemoglobin provides for more oxygen in a given unit volume of blood; the chemical changes provide the conditions for an adequate dissociation of oxyhemoglobin in the tissue capillaries, and it has been thought that the circulatory changes result in an increased volume of blood flow, which would raise, to a slight extent, the oxygen pressure in the tissues.

Even these accepted modes of adjustment may be expected to reach their limitations. The English physiologist J. S. Haldane has therefore postulated that diffusion alone cannot account for the intake of oxygen but that it is supplemented by an active secretion of oxygen by the pulmonary epithelium. This conclusion was based on the alleged demonstration that at high altitudes the oxygen pressure in the blood may be higher than in the alveolar air with which it is demonstrably in equilibrium under ordinary conditions. Most of the experts on the physiology of respiration have combated Haldane's contention. Recently he [3] has again reviewed the evidence and the criticisms, only to reaffirm more vigorously than ever his conviction that in persons acclimatized at high altitudes the lungs are actively secreting oxygen, just as Ludwig originally suspected that they are capable of doing. Only on this assumption does it seem possible to Haldane to explain the extraordinary experiences of the men in the Mount Everest expeditions as well as certain other unusual performances in mountain climbing. The expedition of the Duke of the Abruzzi in the Himalayas in 1909 reached a height of 24,600 feet without any mountain sickness in the climbing party. Several members of the acclimated Mount Everest party not only had no mountain sickness on staying over a night at 27,000 feet, but they could sleep well and were quite comfortable during rest, so far as the extreme privations suffered render it possible to speak of comfort. To an unacclimatized person, a stay of any duration at a height of 27,000 feet means absolutely certain death within a very short time. At heights above about 12,000 feet, death from mountain sickness may quite well occur in persons who are completely unacclimatized and in bad physical training. According to Haldane the oxygen secretion theory, in conjunction with the other known factors in acclimatization, accounts for all the known facts satisfactorily; but apart from the secretion theory these facts are an unintelligible chaos. That both good physical training and previous exposure to low atmospheric pressures have a considerable influence in preventing mountain sickness is well known to both mountaineers and airmen. The oxygen secretion theory, Haldane maintains, furnishes at once an explanation of these facts. Secretion does not exist during rest but is evoked by muscular exertion, and much less readily and more slowly by want of oxygen in the arterial blood unless this want is very great, as in severe carbon monoxide poisoning. With practice it is evoked more readily and to a greater extent; and this condition is an essential part of physical training, and acclimatization to the effects of high altitudes.

3. Haldane, J. S.: Acclimatisation to High Altitudes, Physiol. Rev. 7: 363 (July) 1927.

Current Comment

SOLUTION OF PITUITARY FOR INDUCTION OF LABOR

Although the use of solution of pituitary as a stimulant of uterine contractions during labor has been before the medical profession for sixteen years, discussion continues as to its value and safety. The consensus [1] appears to be that its employment is practically free from danger to the mother when the preparation is used properly, and that it has some danger for the child even with the best of technic. In recognition of the shortcomings of the older method, investigators in the Johns Hopkins University School of Medicine tried other routes of administering solution of pituitary. Their attention was directed particularly to the mucous membrane covering the inferior turbinate bone. Freund observed that this membrane undergoes changes in most pregnant women, its normally spongy and highly vascular condition apparently increasing. It seemed obvious, therefore, that solutions applied to this area in the nose would pass quickly into the general circulation. Hofbauer [2] and his associates applied solution of pituitary to the nasal mucous membrane in a number of cases, and as a result developed a new technic. Under direct vision with reflected light and the use of a speculum, the nose is cleansed and a pledget of cotton, moistened with 1.25 cc. of solution of pituitary, is inserted snugly under the anterior end of the inferior turbinate of one nostril. At the end of an hour or two the pledget is withdrawn. If necessary, a fresh pledget is applied to the opposite nostril, thus leaving one nasal passage always free for breathing. It seems important that the pledgets of cotton be applied firmly to the inferior turbinate, and that if a second pledget is found necessary it should be applied before the effect of the first one wears off. Among fifty-six cases in which the indications for the induction of labor were toxemia, postmaturity, severe pyelitis, hydramnios and dead fetus, this procedure is reported as successful in every instance. In a series of twenty-four cases to test the method in normal pregnant women during the last month of pregnancy and at term, there were nine failures. All the babies were born alive. This method

1. Scott, W. A.: Present Status of the Induction of Labor by Means of Pituitary Extract, Am. J. Obst. & Gynec., October, 1926.

2. Hofbauer, J. I.: The Nasal Application of Solution of Pituitary for Obstetric Purposes, J. A. M. A. **89**: 24 (July 2) 1927. Hofbauer, J. I., and Hoerner, J. L.: Nasal Application of Pituitary Extract for the Induction of Labor, Am. J. Obst. & Gynec., August, 1927.

seems to be the safest available for obstetric purposes, as there is the possibility of withdrawing the drug and preventing further absorption should the uterus pass into tetanic contraction. Further experience, however, will be necessary, the authors say, before its use can be standardized.

CULTURES IN WHOOPING COUGH

In 1924, Lawrence W. Smith [1] reviewed the literature on whooping cough for the years 1919 to 1924. Among other work, he reported Meyer's results obtained in Copenhagen: 970 cultures positive to *Bacillus pertussis* in 1,106 cases of whooping cough; 75 per cent positive results in cultures made during the catarrhal stage; 57 per cent in the first week of the paroxysmal cough; 61 per cent in the second week of the cough, and only 9 per cent after the fourth week. Smith also referred to Povitzky's improvement in the technic for isolating the bacillus. In her first series, she obtained 22.8 per cent positives. For her second series, the percentage of positives was 43.5 in twenty-three cases [2] examined before the end of the fourth week of the whoop. In 1924, Madsen [3] of Copenhagen, in his Cutter lecture, devoted much space to the bacteriology of whooping cough. Recently, Lawson and Mueller,[4] using a medium with a final titration ranging between p_H 6.6 and p_H 7.3, reported an average of 41 per cent successful isolation of the causative organism of whooping cough in 533 cases. Of those examined in the catarrhal period, 59 per cent were positive and the number of positives progressively decreased as the disease advanced. Lawson and Mueller outlined methods by which cultures may be obtained. Nose and throat cultures, as usually taken, were not satisfactory. They did obtain results, however, by inoculating plates with sputum and by holding open plates of medium before the mouths of patients during paroxysms. Although the "cough plate" is useful when sputum cannot be obtained and when the child is old enough to understand the object of the work, the sputum culture will probably find wider favor. Any one who is familiar with the procedure of obtaining sputum for typing in pneumonia could secure specimens satisfactory for use in pertussis. Thick, tenacious exudate from the trachea and bronchi is collected in a clean receptacle, such as a cup or a Petri dish. With the approach of winter, physicians who are within convenient reach of a clinical laboratory may find increasing use for this method of diagnosis. Its particular usefulness lies in the fact that the culture is more likely to be positive, the earlier in the disease that the culture is made. This has an important bearing on epidemics, isolation and quarantine.

1. Smith, L. W.: A Review of the Literature on Whooping Cough for the Last Five Years, from 1919 to 1924, Am. J. Dis. Child. **28**: 597 (Nov.) 1924.
2. Povitzky, Olga R.: Improved Methods for the Isolation and Later Cultivation of B. Pertussis, J. Infect. Dis. **32**: 8 (Jan.) 1923.
3. Madsen, Thorvald: Whooping Cough: Its Bacteriology, Diagnosis, Prevention and Treatment, Boston M. & S. J. **192**: 50 (Jan. 8) 1925.
4. Lawson, G. M., and Mueller, Mary: The Bacteriology of Whooping Cough, J. A. M. A. **89**: 275 (July 23) 1927.

Act Must Be Interesting.—The mere repetition of an act through compulsion does not fix a habit unless the act is interesting.—Ferguson, quoted in Dansdill's Health Training in Schools, p. 218.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Poliomyelitis Outbreak Diminishes.—The outbreak of infantile paralysis which has prevailed in California since June is disappearing, according to the state department of public health. California is said to have been the first state visited this year by this disease. Between January 1 and September 1 there had been a total of 900 cases in California with 101 known deaths.

GEORGIA

Society News.—Dr. Miller T. Harrison read a paper before the Fulton County Medical Society, Atlanta, November 3, on "Suggestions for Prevention of Abdominal Wound Infections." A barbecue in honor of the society was given at the home of Dr. Elmore C. Thrash, Atlanta, November 5.——At the annual meeting of the Atlanta Dermatological Society, September 21, Dr. Cosby Swanson was elected president.

Personal.—Dr. Roy S. Leadingham has been appointed pathologist to the Grady Hospital white unit, Atlanta.——Dr. Roger C. Swint has been reelected superintendent of the insane asylum, Milledgeville; Dr. Swint has served in this capacity for twenty-four years.——Dr. Obie B. Walker, Elberton, was elected president of the state board of medical examiners at their annual meeting, October 11; Dr. John O. Elrod, Forsyth, was made vice president, and Dr. B. T. Wise, Plains, secretary-treasurer.

IDAHO

Personal.—Dr. Frank W. Almond, Boise, has been designated public health adviser for the state department of public welfare until a permanent official is appointed to the vacancy created by the resignation of Dr. Ralph M. Fouch.——Drs. Ones F. Page, Sandpoint, and Walter S. Bardwell, Newport, Wash., have taken over the interests in the Priest River Hospital of Dr. Edward E. Getzlaff, who is to sail for Japan shortly to take charge of a hospital being built by the foreign mission board of the Seven Day Adventist Church in Tokyo.——Dr. George Williams of Independence, Mo., was selected, October 1, as superintendent of the Idaho State Hospital at Lewiston. There were about seventeen candidates for the position. Dr. Williams was formerly superintendent of a hospital in Kansas City.

ILLINOIS

Hospital News.—The Norbury Sanatorium, Jacksonville, announces a program of expansion representing an investment of about $100,000 and including the construction of a fireproof addition with a capacity of twenty patients, making the total capacity 120; the sanatorium has a department for women known as Maplecrest just outside the city limits and surrounded by 31 acres of landscaped grounds.

Society News.—About twenty-three members of the DeKalb County Medical Society were entertained at dinner at St. Mary's Hospital, DeKalb, September 29; the principal speaker was Dr. David B. Penniman, Rockford, and his subject, "The Return of the General Practitioner." This was the second annual dinner of the society at this hospital.——Among others, Dr. Jabez N. Jackson, Kansas City, Mo., President of the American Medical Association, will address the Adams County Medical Society, Quincy, November 14. This will be an all-day meeting, consisting of clinics, lectures, banquet and entertainment.——Dr. Elmer B. Coolley, Danville, was elected president of the Illinois Tuberculosis and Health Association, October 25, to succeed Dr. John P. Denby, Carlinville.——Dr. Alfred A. Strauss, Chicago, addressed the Will-Grundy County Medical Society, September 27, on "Surgical Treatment and Duodenal Ulcers." The following meeting was addressed by Dr. Leon Bloch of Chicago on the medical side of the same subject. Dr. Henry E. Irish of the University of Illinois College of Medicine, Chicago, addressed the October 19 meeting on "Treatment of Pneumonia in Children," and Dr. Erwin P. Zeisler of Northwestern University Medical School, Chicago, the October 26 meeting on "Differential Diagnosis and Treatment of Lesions of the Tongue and Mouth."

Chicago

Eighth Pasteur Lecture.—Dr. C. Macfie Campbell, professor of psychiatry, Medical School of Harvard University, Boston, will deliver the eighth Pasteur lecture (illustrated) before the Institute of Medicine of Chicago at the City Club, November 18, 8:15 o'clock, on "Some Problems of the Functional Psychoses." The institute of medicine and the Society of Internal Medicine of Chicago held a joint meeting, October 28, which was addressed by Dr. Samuel T. Orton, formerly professor of psychiatry, State University of Iowa College of Medicine, Iowa City, on "Some Problems in Cerebral Dominance."

Gifts for Orthopedic Surgery and Ophthalmology.—At the one hundred and forty-seventh convocation of the University of Chicago, September 2, it was announced that Mrs. Gertrude Dunn Hicks had given the university $300,000 for an orthopedic hospital which will bear the name of the donor and be chiefly for the treatment of crippled children unable to pay; also a gift of $250,000 from Louis B. and Emma M. Kuppenheimer for the study of the structure, functions and diseases of the eye and for research and teaching in the department of ophthalmology, to be known as the Louis B. and Emma M. Kuppenheimer Foundation.

Collection of Old Medical Prints.—Dr. Frank Webster Jay, Evanston, has given to the University of Chicago 555 portrait prints and autographed letters of celebrated physicians which will be preserved and exhibited as the Frank Webster Jay Collection. Mr. Charles B. Pike, Chicago, has donated to the university 465 engravings of famous old hospitals and distinguished surgeons of the seventeenth, eighteenth and nineteenth centuries which he made a special trip to Europe to collect and which will be exhibited throughout the new university clinics and hospital. The university is collecting 100 portraits of leading contemporary physicians to intersperse with the Pike collection.

INDIANA

Hospital Presented to University.—The William H. Coleman Hospital for Women, Indianapolis, was opened, October 20, and formally presented to the University of Indiana by Mr. and Mrs. William H. Coleman, who gave more than $350,000 to build and equip the hospital as a memorial to their daughter. The speech of acceptance was made by the president of the board of trustees of the university, Mr. James W. Fesler, and the principal address by Dr. Palmer Findley, Omaha, president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons. A memorial tablet at the entrance was unveiled by Coleman Atkins, the grandson of Mr. and Mrs. Coleman, in memory of whose mother the tablet was unveiled. Among the other speakers were professors emeriti in the department of obstetrics of the school, Dr. Charles E. Ferguson and Dr. Louis Burckhardt. The dean of the school of medicine, Dr. Charles P. Emerson, presided during the addresses.

About 800 "Drugless Healers" Apply for Licenses.—In accordance with a recent amendment to the medical practice act, the state board of medical registration and examination will soon give final consideration to about 800 applications for the licensing of "drugless healers." Dr. Eldridge M. Shanklin, Hammond, secretary of the board, states that it has been a difficult task to deal with this matter, partly because the recent exposure of the Briggs' diploma mill in Indianapolis made it necessary for the board to make a careful study of each diploma presented by applicants for drugless licenses, and because the legislature did not create a fund which might be used in carrying out the provisions of the new law. Not any of the fees paid by the applicants were available for the work that had to be done. Indiana's Board of Medical Registration and Examination now has a chiropractic member in accordance with the provisions of the new law; it also has an osteopathic member and representatives of some other so-called cults, in addition to the members who are doctors of medicine.

MARYLAND

Herb Doctor Given Maximum Fine.—S. W. Miller, 1523 West Mulberry Street, Baltimore, an herb doctor, representing Kirge's Indian Tribe Medicine Company, was found guilty in criminal court, October 5, of practicing medicine without a license and was given a maximum fine of $200. A patient with advanced tuberculosis applied at Miller's office, recently, and paid $10 for his first treatment. He was later admitted to the Baltimore City Hospital, where he died of tuberculosis. The police department then sent a man presumably in good health to Miller, complaining of pain in his chest. He was examined and given medicine. On this evidence, Miller was arrested.

Society News.—Among others, Dr. Harold Raymond Peters addressed the Baltimore City Medical Society, October 21, on "Chronic Arsenic Poisoning," and Dr. S. Lloyd Johnson, on "A Case of Lymphoid Leukemia of the Skin."——Dr. Dean Lewis addressed the Baltimore City Medical Society, November 4, on "Operability of Cancer of the Stomach"; Dr. John M. T. Finney on "The Place of Surgery in the Treatment of Peptic Ulcer"; Dr. Robert T. Miller, Jr., "Surgery of the Esophagus"; Dr. Harvey B. Stone, "Surgery of Carcinoma of the Sigmoid and Rectum," and Dr. Walter Hughson "A Postoperative Study of Gastric and Duodenal Ulcer."——The eighteenth course of lectures of the Herter Foundation was given at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, November 3-5, by Dr. Sven Ingvar, University of Lund, Sweden; two lectures concerned the structure and function of the cerebellum, and the third the pathogenesis of the Argyll-Robertson phenomenon.

MASSACHUSETTS

Annual Mental Hygiene Meeting.—The annual meeting and luncheon of the Massachusetts Society for Mental Hygiene will be held at the Twentieth Century Club, 3 Joy Street, Boston, November 16, 1 o'clock. Payson Smith, commissioner of education, Massachusetts, will speak on "Obligations of the School as to the Mental Health of the Child," and Mr. Richard A. Feiss, an industrial engineer, on "The Mental Hygiene of the Management."

Hospital News.—On the eighty-first anniversary of ether day, October 17, the trustees of the Massachusetts General Hospital and the directors of the Massachusetts Eye and Ear Infirmary invited friends of the institution to attend the opening of the new building connecting the two outpatient departments.——The Robert B. Brigham Hospital, Boston, is appealing to the public for $600,000 for a new building for incurable patients, and for a solarium on top of the present service building.——A floor in the new wing of the Holy Ghost Hospital for Incurables, Cambridge, was dedicated by the Catholic Women's Guild, October 2. The floor was a gift of the guild, which also gave a check for $5,500 toward the general expenses of the hospital.

Salaried Assistant to the President.—The council of the Massachusetts Medical Society at its October 5 meeting in Boston considered the need of a salaried assistant to the president of the society. The discussion brought out that the amount of work has increased and that, while the society has been uncommonly free from any imputation of lobbying, there is an absolute necessity that it should be appropriately represented before the committees of the state legislature, a duty which has become an unfair burden on the president. It was pointed out that societies in other states spend large sums of money in keeping in touch with lay organizations having to do with public health, and that an assistant such as was under consideration could also help plan and carry on the annual meeting. The motion to appoint an assistant passed the council unanimously, and Dr. James S. Stone, Boston, a former president of the Massachusetts Medical Society, consented to accept the position.

MICHIGAN

Dr. Hartz Honored.—The board of education of Detroit recently unanimously voted to name one of the city's open-air schools in honor of Dr. Henry J. Hartz, who has long been identified with antituberculosis work in Detroit and Michigan and who was instrumental in establishing the tuberculosis sanatorium at Howell. About thirty friends of Dr. Hartz tendered him a complimentary dinner, October 20, at the Detroit Athletic Club.

Personal.—Friends of Dr. Horace W. Sheldon, Negaunee, presented him with a gold watch and gave a smoker in his honor, recently, prior to his departure from that community, where he had resided about forty years.——Governor Fred W. Green made the following appointments, October 8, to the state board of registration in medicine for terms of four years: Drs. Frank A. Kelly, Detroit; Jacob D. Brook, Grandville; Samuel Edwin Cruse, Iron Mountain; William H. Marshall, Flint, and Ansel B. Smith, Grand Rapids.

Two Day Clinic at Ann Arbor.—The department of graduate medicine of the University of Michigan will give to members of the medical profession of the state a two day postgraduate clinic at Ann Arbor, November 18-19. The

clinics will include otolaryngology, ophthalmology, oral surgery, general surgery, genito-urinary surgery, internal medicine, roentgenology, clinical pathologic conferences, and a discussion of endocrine disease. There will be a dinner at the Michigan Union, November 18, with an address by Dr. Donald C. Balfour, Mayo Clinic, Rochester, Minn., who will also give a clinic, Saturday morning, on surgical diseases of the stomach. Saturday afternoon, Michigan plays football at Ann Arbor with Minnesota.

Society News.—Dr. Joseph C. Bloodgood, Baltimore, held a cancer clinic at the Harper Hospital, Detroit, October 27, under the auspices of the Wayne County Medical Society, to which physicians were invited to bring any cases of cancer of the mouth, lips, breast and bone.——Dr. Plinn F. Morse addressed the Wayne County Medical Society, Detroit, October 11, on "Pathologic Clinical Conference on Diseases of the Liver."——During the visit of the Travel Club of the surgical section of the Royal Society of Medicine of England in Grand Rapids, September 9-10, Dr. Frederick C. Warnshuis, Speaker of the House of Delegates of the American Medical Association, spoke on "Organized Medicine in America." The meeting was opened by the president of the Kent County Medical Society, Dr. Vernor M. Moore. Dr. Cyrus C. Sturgis of the Simpson Memorial Institute for Medical Research, Ann Arbor, spoke on "Advances in the Treatment of Pernicious Anemia." Clinics were held at the Blodgett Memorial Hospital, Friday, and at St. Mary's and Butterworth hospitals, Saturday. Members of the club and their wives were entertained in the afternoons by trips to resorts on Lake Michigan.——Dr. Alex B. MacNab, Baltic, resigned as secretary of the Houghton County Medical Society on moving to Cassopolis, and Dr. John T. P. Wickliffe, Lake Linden, was elected secretary for the remainder of the year. ——A "dutch dinner" was enjoyed by the Eaton County Medical Society at the Charlotte Hotel, Eaton; Dr. George F. Bauch addressed the society on European clinics.—— Dr. William Fowler, Detroit, addressed the Monroe County Medical Society at its annual meeting in Dundee, October 27, on "The Tonsil Question and Common Colds." This was the thirty-second anniversary of the medical society, and a birthday cake with thirty-two candles was provided for the occasion by the proprietor of the Park Hotel, where the meeting was held.——Howard B. Lewis, Ph.D., professor of physiologic chemistry, University of Michigan Medical School, Ann Arbor, addressed the Wayne County Medical Society, Detroit, November 8, on "Recent Studies on the Rôle of Protein in Nutrition."——Dr. John S. Coulter, Northwestern University Medical School, Chicago, addressed the Wayne County Medical Society, Detroit, November 1, on "What the General Practitioner May Expect from the Intelligent Use of Physical Therapy."

MINNESOTA

Personal.—Sir John Bland-Sutton, surgeon to the Middlesex Hospital, London, England, was guest of the Mayo Clinic in October.——Major James F. Coupal, U. S. Army, gave a series of lectures at the Mayo Foundation, beginning October 25, on "The History of Pathology."

Prize in Clinical Medicine.—The Minnesota Society of Internal Medicine offers a prize of $250 to any practicing physician in the state for the best thesis on a subject relating to clinical internal medicine or to research in the sciences relating to internal medicine. The object of the prize is to stimulate research. Physicians in employ of the U. S. Army, Navy or Public Health Service whose legal residence is Minnesota are eligible; members of the Minnesota Society of Internal Medicine are not eligible. Candidates should submit their theses before December 31, and should notify the secretary, Dr. Edwin L. Gardner, 610 Yeates Building, Minneapolis.

"Dr. Kanawana," Formerly an Herb Doctor.—Beginning as an Indian herb doctor in Bellingham about four years ago, "Dr. Kanawana," whose real name is said to be A. L. Errington, later called himself a naturopath and began the practice of medicine. He was brought into court recently and fined $50 and costs. It is reported that "Dr. Kanawana," since his former trial, has been practicing, and again has been ordered to appear for trial at Montevideo at the next term of court. He is reported to have removed a small cyst from a woman's breast which the patient believed was cancer; she paid the "doctor" $250. He claimed to be a graduate of some college in Virginia, and said that he had lost his diploma.

Society News.—The Hennepin County Medical Society held its annual memorial meeting, November 2, in memory of the following members who died during the last year: William R. Murray, Amos Wilson Abbott, Frederic J. Souba, Robert S. Brown and Arthur L. Travis. Among other speakers on this occasion was Theodore Christianson, governor of Minnesota. At the November 7 meeting the society presented a silver loving cup to Dr. Lorin W. Smith on behalf of the Wabash County (Ind.) Medical Society, of which he was a most active member. Dr. Smith is now making his home with his son in Minneapolis. At this meeting, a symposium on cancer of the uterus was presented by Drs. Roy E. Swanson, Samuel B. Solhaug and Jennings C. Litzenberg. There was a demonstration of the audiometer by Dr. Horace Newhart. Moving pictures were shown of the medical golf tournament recently held at the Bloomington Golf Club.——Dr. Arthur W. Ide presented a thesis on "Spinal Injuries" before the Minnesota Academy of Medicine at the Town and Country Club, St. Paul, November 9.——The Southern Minnesota Medical Association elected Dr. John S. Holbrook, Mankato, as president, October 1.

MISSOURI

Personal.—Dr. Edward H. Kessler, St. Louis, announces his retirement from active practice on account of poor health. ——Dr. Paul Baldwin, Kennett, was elected president of the Southeast Missouri Medical Association at the recent annual meeting at Poplar Bluff, October 11-13.——Dr. Edwin L. Hume, Bourbon, has been appointed consulting physician to the Missouri Workmen's Compensation Commission, succeeding Dr. Earle H. Coon, Grand Pass, who has been appointed first assistant physician at state hospital number 3, Nevada.

Society News.—Dr. George H. Thiele, Jr., Butler, read a paper on "Danger of Infections of the Face and Scalp" before the Cass County Medical Society, Pleasant Hill, September 8, and Dr. William G. Thompson, Holden, a paper on "Relation of Surgeon, Internist and Roentgenologist"; Dr. James Stewart, Jefferson City, state health commissioner, discussed "Activities of the State Board of Health." Members of the Bates, Lafayette, Henry and Johnson county medical societies and the president and secretary of the state medical society attended.——Dr. Ernest G. Mark, Kansas City, addressed the Saline County Medical Society, Marshall, September 14, on "Kidney Stone." It was brought to the attention of the society that the examination of students and the care of the athletic teams of the Missouri Valley College at Marshall is being done by an osteopath; a committee was appointed to confer with the president of the college on the subject.——A symposium on pain in the back was conducted by the St. Louis Medical Society, October 25; the speakers were Drs. Augustus G. Pohlman, Warren P. Elmer, Leland B. Alford, Joseph H. Sanford, Le Roy C. Abbott and William H. Vogt. At a special meeting of the society, October 7, Dr. Robert F. Lischer, Mascoutah, Ill., gave a "Pen Picture of the Country Doctor." A series of conferences is being conducted at the society's building by Dr. Oliver H. Campbell, commander of the three hundred and twenty-seventh medical regiment, organized reserves, on field duties of medical officers; Capt. John R. Hall, medical corps, U. S. Army, who is an instructor at Washington University School of Medicine, conducts the conferences. All members of the society are invited to these six conferences whether they are medical officers or not. ——Dr. Rutherford B. H. Gradwohl, St. Louis, addressed the evening session of the monthly clinic of the Kansas City Southwest Clinical Society, November 8, on "Laboratory Diagnosis of Gonorrhea by the Cullen Method"; the day program comprised operative clinics, medical clinics, ward rounds and demonstrations in various specialties. The Jackson County and the Wyandotte County medical societies cooperated in holding these clinics, which are held at different hospitals in Kansas City throughout the year.

NEBRASKA

Appointments to Basic Science Board.—Announcement has been made of the appointment of members to the basic science board of Nebraska which was created by the last legislature to provide examinations in the six basic sciences for all persons seeking to practice the healing arts. The chairman of the board is Dr. Leunis Van Es, professor and chairman of the department of animal pathology and hygiene, University of Nebraska, Lincoln. The other members are Theos J. Thompson, Ph.D., University of Nebraska, Lincoln; Father Bernard L. Sellmeyer, Omaha, professor of biology, Creighton University; Irving H. Blake, Lincoln, professor of zoology and anatomy, University of Nebraska, and Soren E. Isacson, Omaha. The first examination by the board was scheduled for October 27-28. The only other states requiring examination in the basic sciences are said to be Wisconsin, Minnesota and Washington.

NEW YORK

Fatal Case of Anthrax.—The health officer of Yonkers recently reported to the state department of health three cases of anthrax occurring in employees of a carpet mill. One patient died, October 6, and the other two are recovering. According to the *Health News*, all of them are said to have received serum treatment promptly. They are said to have contracted the disease while handling imported wool.

Poliomyelitis Cripples Under State Care.—There were 2,007 patients crippled by poliomyelitis under state care, September 1, an increase of 157 in four months; of these, the number in whom the disease had its onset since 1916 was 1,671. The number of patients under care by the state with onset of the disease prior to 1916 had decreased by twenty-three. During August, ten orthopedic clinics were held, the state orthopedic surgeon reports, and more than half of the number of patients attending had had poliomyelitis.

Society News.—Dr. James Craig Potter addressed the Rochester Academy of Medicine, October 26, on "Pressure Changes in the Biliary Tract."——Dr. Walter G. Crump addressed the Rochester Medical Association, November 2, on "Diffuse Peritonitis."——The annual meeting of the Second District Branch of the Medical Society of the State of New York was held at the Brooklyn Chamber of Commerce, November 9. At the dinner, Dr. Joseph P. Garen, president of the Cattaraugus County Medical Society, gave an address on "Five Years of Health Promotion"; Dr. James F. Sadlier discussed "Relation of the Medical Society of the State of New York to the Physicians of Long Island." The year was reviewed by a representative of each of the four counties from the district, Dr. William H. Ross, Suffolk County; Dr. Louis A. Van Kleeck, Nassau County; Dr. Francis G. Riley, Queens County, and Dr. Thurston S. Welton, Kings County.

County Society Confers with Local Grange.—Medical care for rural residents was the topic of a conference, September 6, between the public relations committee of the Genesee County Medical Society and representatives of the Grange of Genesee County, one presenting the difficulties said to be encountered in securing medical aid, particularly in winter and at night, the other pointing out the difficulties in medical practice in the community. Resolutions were passed to the effect that the people should make freer use of hospital facilities, should make contact with their physicians earlier in the day, that prospective maternity patients should engage a physician before the end of the sixth month, that all residents of the county should affiliate themselves with a family physician, and that members of the Grange and the county medical society should use all possible influence with officials to keep the roads open in winter in a condition passable for automobiles.

New York City

Second Harvey Lecture.—Dr. Frank C. Mann, director, division of experimental surgery and pathology, Mayo Clinic, Rochester, Minn., will deliver the second Harvey lecture at the New York Academy of Medicine, Friday evening, December 9, on "The Relation of the Liver to Metabolism."

Hospital News.—Capt. Richmond P. Hobson, hero of the Spanish-American War, Clarence J. Owens and Dr. John M. O'Connor have purchased the Community Hospital and nurses' home at 17 West One Hundred and First Street. The buildings will be extensively altered, it is reported, as a special hospital to be conducted under the control of the International Narcotic Association.——Dr. Julius Jarcho was elected president of the medical board of Beth David Hospital, October 27, for the ensuing year.

Salvatore Benitez Sentenced.—The state board of medical examiners caused the arrest of Salvatore Benitez, a Porto Rican, 11 St. Nicholas Avenue, who is said to have admitted in court that he practiced medicine without a license and issued prescriptions for narcotics last June. The representative of the state board testified, it is reported, that the defendant's office was equipped with physician's paraphernalia and a sign representing Benitez as a physician. Benitez was sentenced to an indeterminate term of not more than three years.

Dr. Snow Honored.—At the annual meeting of the American Electrotherapeutic Association, September, in New York, a beautifully bound collection of letters of about 200 confrères, mostly former pupils of Dr. William B. Snow, was presented to him as a testimonial of esteem. The collection was compiled by Dr. William L. Clark, Philadelphia. At the same time, a large camera was also presented by Dr. Edwin N. Kime of the University of Indiana School of Medicine, who acted as spokesman for a group of Dr. Snow's graduate pupils. The feeling of kindness and respect toward the veteran editor of *Physical Therapeutics* was further expressed in October when Dr. and Mrs. Snow visited his boyhood home in the Catskills. Dr. and Mrs. Fred de Kraft, who went with the Snows through this scenic region, felt that the best part of it was the happiness of Dr. Snow in meeting again the friends of his early years.

Society News.—Dr. Bernard Sachs addressed the Medical Society of the County of Kings, October 18, on "The Child and the Man," and Charles J. Dodd on "Crime and Its Cure."——Dr. Louis Chargin was elected president of the Brooklyn Dermatological Society, October 17.——The joint meeting of the New England Pediatric Society, the Philadelphia Pediatric Society and the section of pediatrics of the New York Academy of Medicine was held at three places, Bellevue Hospital, Hospital of the Rockefeller Institute, and the New York Academy of Medicine. Among others, papers or demonstrations were given by Dr. Harry Bakwin on "Factors Influencing the Calcium Level in the Blood Serum of Infants with Tetany"; Drs. Alexis Carrel and Albert H. Ebeling, "Cinematographic Studies of Normal and Malignant Cells," and Bela Schick, "Certain Aspects of Tuberculosis in Infancy."——Dr. Ira S. Wile addressed the New York Physicians' Association, October 26, on "Physical Problems in Abnormal Behavior," and Dr. Joseph Collins on "The Neurologist's Progress."——Dr. Louis F. Bishop will address the Medical Association of the Greater City of New York, November 21, at the New York Academy of Medicine, Fifth Avenue and One Hundred and Third Street, on "Practice of Cardiology by the Help of Graphic Methods, with a Consideration of the Results of Continuous Treatment by Drugs, Diet, Physical Therapy and Psychotherapy," the papers to be discussed by Drs. Theodore Stuart Hart, Alexander Lambert, Edward E. Cornwall, Harlow Brooks, James J. Walsh, Russell Burton-Opitz, Orrin S. Wightman, Bernard S. Oppenheimer, Morris H. Kahn, John Neilson, Jr., Sidney P. Schwartz and Louis F. Bishop, Jr.

Personal.—Dr. Fenwick Beekman has been appointed director of surgery at the Lincoln Hospital.——Dr. Benjamin Jablons has been appointed associate metabolist to the Jewish Memorial Hospital.——Dr. Damoso Rivas, assistant professor of parasitology, University of Pennsylvania School of Medicine, Philadelphia, comes to the new Pan American Hospital as director of pathology. The Pan American Hospital was dedicated, October 16; the outpatient department opened, October 28, on the birthday of Simon Bolivar.——Dr. Joseph Bieber has been elected president of the medical board of the People's Hospital to succeed the late Dr. Ignatz M. Rottenberg.——Dr. William S. Bainbridge gave a dinner at the Union League Club, October 26, in honor of Dr. Stanislaw Rouppert, surgeon general of Poland, who has been in this country for several weeks.——Nicholas Murray Butler, LL.D., president of Columbia University, has been elected a life member of the Joint Administrative Board of the medical center, which is under construction at Broadway and One Hundred and Sixty-Eighth Street, to succeed the late Dr. Walter B. James.——Dr. Fred H. Albee was decorated with the order of Commander of the Crown of Roumania at Bucharest, October 27, for his "contributions to advancement of bone surgery"; Dr. Albee delivered a course of lectures in Bucharest on orthopedic surgery.——A memorial meeting in honor of the late Dr. Jacob Fuhs was held recently by the Medical Society of St. Catharine's Hospital, which was attended by leading physicians in Brooklyn.——Dr. Haven Emerson, professor of public health administration, Columbia University College of Physicians and Surgeons, addressed the autumn meeting of the School Physicians' Association, November 4, on health causes of school absences.

NORTH DAKOTA

Increase in Death Rate.—The death rate for North Dakota for 1926 was 822 per hundred thousand of population, as compared with 787 in 1925. The U. S. Department of Commerce, in releasing these figures, says that the increase is largely accounted for by increases in heart disease, influenza and measles.

Symposium on Malpractice.—At the next meeting of the Stutsman County Medical Society, November 28, at Trinity Hospital, Jamestown, the program will comprise a symposium on malpractice in which the speakers will be Drs. N. Oliver Ramstad, Bismarck, and Edgar A. Pray, Valley City. Attorneys and representatives of the malpractice insurance companies will lead the discussion. A dinner will be served by

the hospital, and all physicians in the district, whether members of the society or not, are invited. The election of officers for the coming year will be held at this time.

OHIO

Ohio Snows Under the Chiropractors.—The Initiated Chiropractic Bill, which was voted on throughout the state of Ohio, November 8, is said to have been defeated by a majority of about 250,000. The total unofficial tabulation of votes against the bill was about 625,000. The voters of Ohio, as well as its medical profession, are to be congratulated (THE JOURNAL, November 5, p. 1614).

Theaters and Newspapers Honor Veteran Physicians.—A celebration was held, recently, in Akron, by local theaters in honor of physicians in the community who have been in practice many years. Following a theater party, the newspapers gave the physicians a dinner, and a veterans' club was organized with Dr. Elmer L. Mather, president. The honor of being oldest in years of practice went to Dr. James N. McMaster, who had fifty-seven years to his credit.

PENNSYLVANIA

Personal.—Russell B. Tewksbury, Sc.D., has resigned as head of the vital statistics bureau of the state department of health and has been succeeded by George B. L. Arner, Ph.D., formerly statistician in the U. S. Department of Agriculture and with the Ohio State Board of Health and the International Health Board of the Rockefeller Foundation.

Physical Examinations at County Fair.—Physical examinations were introduced this fall at the health exhibit of the Schuylkill County Fair. Newspapers announced this new feature for several days previous to the opening, and many persons came to the fair with the definite purpose of having a health examination. A crowd gathered continuously about the health exhibit and more persons were listed for examination than could be accommodated. The examinations were conducted by the medical secretary of the Pennsylvania Tuberculosis Society, Dr. W. P. Brown. A report of the observations and recommendations was given to each person and also sent to the family physician. The evident success of this feature probably will insure it a place in the yearly program at the state fair.

Society News.—Dr. Judson Daland, professor of medicine, University of Pennsylvania Graduate School of Medicine, Philadelphia, was the speaker of the evening at the recent annual banquet of the Harrisburg Academy of Medicine; his subject was "The Diagnosis of Focal Infection."——Dr. Josiah F. Reed addressed the Dauphin County Medical Society, Harrisburg, November 1, on "Current Obstetric Topics."——At the November 15 meeting of the Allegheny County Medical Society, Pittsburgh, Dr. Lawrence G. Beinhauer will read a paper on "Sodium Thiosulphate and Its Therapeutic Field in Syphilis"; Dr. Thomas H. Manley, Jr., Tarentum, "The Eye as an Aid in Diagnosis"; Dr. Grover C. Weil, "Surgery of Diseases of the Thyroid"; Dr. William M. Beach, "Factors Fundamental to the Management of Chronic Colitis," and Dr. John D. Garvin, "Diverticulitis."——Dr. John A. McGlinn, associate professor of gynecology, University of Pennsylvania Graduate School of Medicine, Philadelphia, addressed the Lancaster City and County Medical Society, November 2, on "Backache."

Philadelphia

Fiftieth Anniversary of Medico-Legal Society.—The Medico-Legal Society of Philadelphia celebrated by a dinner its fiftieth anniversary, October 25. The guest of honor was Dr. Lambert Ott, the one surviving charter member; the other guests were Drs. Arthur C. Morgan, Philadelphia, president of the Pennsylvania State Medical Society; Dr. Frederick S. Baldi, president of the Philadelphia County Medical Society, and Dr. Wilmer Krusen, city director of health. The president of the Medico-Legal Society is Dr. William Morton Kennedy.

Great Decrease in Amount of Diphtheria.—A diphtheria immunization campaign in the public schools of Philadelphia has been completed, with a total of 157,000 children immunized since the campaign opened in May, 1926. The director of the division of medical inspection of the board of public education, who made the announcement, stated that 35,000 of this number had been immunized this year. Diphtheria has decreased among the public school children. Four years ago there were about 900 cases; last year there were 493, and it is estimated that during the present school year the number will not exceed 350.

Annual Dinner of Resident Physicians.—The forty-first annual dinner of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held at the Penn Athletic Club, Eighteenth and Locust streets, December 6, 7 p. m. The dinner will be a testimonial to Dr. Charles K. Mills, professor emeritus of neurology, University of Pennsylvania School of Medicine. Dr. William G. Spiller, professor of neurology, University of Pennsylvania School of Medicine, Judge Horace Stern and Dr. Wilmer Krusen, director of public health, will also be guests of the association. All ex-interns are requested to send their names and addresses to the secretary, Dr. George Wilson, 2025 Walnut Street, Philadelphia, especially if they have not received the annual announcement.

Society News.—Dr. George R. Minot, Medical School of Harvard University, Boston, delivered the eighteenth Mary Scott Newbold Lecture at the College of Physicians, Philadelphia, November 2, on "The Treatment of Pernicious Anemia."——At the November 9 meeting of the Philadelphia County Medical Society, Dr. Edward L. Bauer, among others, gave a practical talk for the general practitioner on the diagnosis and treatment of infantile paralysis.——Dr. George M. Coates read a paper before the Philadelphia Laryngological Society, November 1, on "Mastoiditis in Infants."——Among others, Dr. Edward D. Atlee addressed the Obstetrical Society of Philadelphia, November 3, on "Preliminary Report on Treatment of Congenital Syphilis."——Dr. Ralph S. Bromer addressed the Philadelphia Roentgen Ray Society, November 3, on "Roentgen-Ray Diagnosis of Infantile Scurvy."——The annual fall smoker of the Philadelphia Alumni Society Medical Department, University of Pennsylvania, will be held, November 19, at the Penn Athletic Club, Eighteenth and Locust streets.——Prof. Gustav Alexander, Vienna, Austria, will address the Philadelphia Laryngological Society, December 6.

TENNESSEE

Society News.—Dr. William Battle Malone, Memphis, addressed a joint meeting of the Hardeman and Fayette county medical societies, Bolivar, September 29, on "Medical Ethics." It is reported that the two societies joined in a permanent organization, electing Dr. John W. Morris, Somerville, president.——The Clinical Orthopedic Society will meet in Memphis, January 9-10, 1928.——Dr. Austin Bell, Hopkinsville, Ky., addressed the Montgomery County Medical Society, September 15, on "Toxemias of Pregnancy" and Dr. Joseph Gant Gaither on "End-Results of Gallbladder Surgery." Physicians from Christian County (Kentucky) and Robertson County were invited to the meeting; in all, fifty-three were present.——The Robertson County Medical Society was invited to meet with the physicians of Cheatham County, October 18, the object being to organize Cheatham County and arrange for a combination of programs.——The Knox County Society held an all-day session at Whittle Springs, September 27. Many took part in the program, presenting cases, holding clinics and entering into the discussion. Dr. Ernest R. Zemp conducted a clinic on diabetes, and presided at a dinner given to the visiting physicians. Among others, Drs. William D. Chapman, Silvis, Ill.; Robert C. Kimbrough, Madisonville; Lee K. Gibson, Johnson City, and James S. Hall, Clinton, were on the program.——The Obion County Medical Society met with the Dyer and Lake county medical societies at Dyersburg, October 6.——Dr. William D. Haggard, Nashville, was guest of honor at a barbecue meeting of the Giles County Medical Society, September 30, at which Dr. A. J. Lancaster was the host.

TEXAS

One Minute in Jail.—A. W. Holder, a chiropractor of Beaumont, was fined $50, September 16, by Judge Singletary, it is reported, for practicing medicine without a license. Holder was also sentenced to one minute in jail.

Texas Makes Another Record.—The state health officer, Dr. James C. Anderson, states that there were more cases of smallpox reported in Texas from January 1 to June 30, 1927, than for the entire year of 1926. The number of cases reported was 2,059.

Society News.—Dr. Rogers Cocke, Marshall, was elected president of the Northeast Texas Medical Society at its annual meeting in Texarkana, October 12, and Dr. Charles A. Smith, Texarkana, secretary-treasurer.——Dr. William S. Horn, Fort Worth, read a paper before the Jones County Medical Society, September 13, Anson, on "Common Sense in the Management of Hypertension."——Dr. D. D. Wall, Jr.,

McAllen, addressed the Hidalgo County Medical Society, Edinburg, September 13, on "Treatment of Eclampsia."——Dr. Lewis R. Talley, Temple, addressed the Lampasas County Medical Society, September 6, on "Tumors of the Ovary."——Dr. Sidney J. Wilson addressed the Tarrant County Medical Society, September 20, on "Fungus Infections of the Skin" and Dr. Caleb O. Terrell on "Criminal Aspect of the Recent Anterior Poliomyelitis Outbreak in Fort Worth." Dr. J. H. Crouch spoke on the epidemiogical aspect of the outbreak in Fort Worth, in which he surveyed forty-nine cases which had occurred in the last four months; Dr. Charles F. Clayton's paper was on "The Orthopedic Management of Anterior Poliomyelitis."——Dr. Stewart Cooper, Abilene, was elected president of the Midwest Texas Medical Association, October 19.

WASHINGTON

Personal.—Dr. Samuel G. Brooks, Anacortes, is serving his third term as mayor of that city.——Dr. Francis W. Anderson has been elected mayor of South Bend.——At the tenth annual convention of the British Columbia Hospitals Association, Victoria, in September, Dr. Richard J. O'Shea, Seattle, was elected president, and Seattle was chosen for the next annual meeting.——Dr. Charles F. Engels addressed the Pierce County Medical Society, Tacoma, October 11, on "Gastro-Intestinal Symptoms Due to Urologic Disease."

Council of Medical Women.—The Women's Legislative Council of Washington is a federation of clubs interested in welfare work in legislation sponsored by the women of the state. Among its many departments is that of health and hygiene of which Dr. Alice M. Smith, Tacoma, has been the director for several years; the other members are Drs. Mabel Seagrave, Minnie B. Burdon and E. Weldon Young of Seattle; Drs. Frances Eastman Rose, George A. Downs and Frederick Epplen of Spokane; Drs. Warren B. Penney and Harry G. Willard of Tacoma; Dr. James T. Rooks of Walla Walla, and Dr. John Reid Morrison of Bellingham, who were selected from the state medical society. This organization maintains a bureau at the state capitol during the sessions of the legislature. It aims to advise on welfare legislation and to cooperate with the state medical society and public health league, so that their efforts coordinate to the benefit of all concerned.

GENERAL

Biochemist Wanted.—There is a vacancy at the Hygienic Laboratory, Public Health Service, Washington, D. C., for a biochemist, and applications for the position should be on file with the U. S. Civil Service Commission in that city not later than December 6. The salary is $3,600 a year, and the duties are to carry on chemical research on animal and human organs, and on materials entering into metabolism. Applicants will not be required to appear for examination at any place but will be rated on their education and experience.

International Oto-Rhino-Laryngological Congress.—Invitations have been issued to the first Oto-Rhino-Laryngological Congress, Copenhagen, July 29-Aug. 1, 1928, under the presidency of Prof. E. Schmiegelow. Persons desiring to deliver lectures at the congress should send the title of the paper and a brief summary to the secretary general, Dr. N. Rh. Blecvad, 3 Nytorv, Copenhagen K., before May 1, 1928. Copies of the reports will be mailed to each member of the congress who registers before May 1. The subscription, including a copy of the transactions, is thirty Danish crowns. English, French and German will be the official languages of the congress. There will be an exhibition of instruments and of pathologic specimens.

Wassermann Tests on Federal Prisoners.—During the last year, Wassermann blood tests have been completed on prisoners in the federal penitentiaries in Atlanta, Leavenworth and McNeil Island. The work was done under the direction of the inspector of prisoners for the Department of Justice as part of a program to improve health conditions in prisons throughout the country, and will be followed by the treatment of all persons with syphilis and by the segregation of those who may expose others to the disease. In the prison population of 3,107 at Leavenworth, it was found that 573, or about 18 per cent, had syphilis; in Atlanta penitentiary, in a population of 3,059, it was found that 858, or about 28 per cent, were infected; at McNeil Island, in a population of 669, it was found that 104, or about 15.5 per cent, were infected.

Penitentiaries Hold More Narcotic Than Liquor Prisoners.—The U. S. Department of Justice announced, October 28, that the most striking instance of increase in the number of federal prisoners in the last ten years was among those convicted for violation of the narcotic law. There were only 299 such prisoners in 1919, while in 1927 there were 2,116, the largest number incarcerated for violating any one federal lay. The next largest number now incarcerated are those convicted of violating the Volstead law, who number 2,040. Three classes of prisoners in the federal penitentiary have decreased in number in the last ten years, namely, those imprisoned for theft from interstate commerce, for violation of the postal laws and for violation of the revenue laws. Altogether, however, the number of federal prisoners during this period has increased 110 per cent, while the population of the country increased less than 20 per cent. June 30, 1927, there were 18,788 federal prisoners in penitentiaries and jails, while June 30, 1918, the number was 8,927.

Society News.—Murray A. Auerback, Indianapolis, was elected president of the Mississippi Valley Conference on Tuberculosis at the fourteenth annual meeting, St. Louis, in September. The next meeting will be held in Des Moines.——At the thirty-fifth annual convention of the Association of Military Surgeons of the United States, Carlisle, Pa., October 6-8, Dr. Frederick H. Vinup, Baltimore, colonel, medical corps, Maryland National Guard, was made president to succeed Surg. Gen. Merritte W. Ireland, U. S. Army; Brig. Gen. Jefferson R. Kean, Washington, D. C., U. S. Army, retired, was reelected secretary and editor of the *Military Surgeon*.——At the recent annual meeting of the American Association of Railway Surgeons, Dr. Fred S. Clinton, Tulsa, Okla., was elected president for the ensuing year; Drs. Adelard E. Bessette, San Marcial, N. M., Elon B. Gilbert, Geneseo, Ill., and Henry M. Michel, Augusta, Ga., vice presidents; Dr. Frederick G. Dyas, Chicago, treasurer, and Dr. Louis J. Mitchell, Chicago, secretary-editor.

Disaster—Floods in New England.—Following a long and heavy rainfall, many streams in New England became raging torrents the first week in November, drowning about 150 persons, damaging millions of dollars of property and rendering thousands of people homeless. In Vermont, the towns most affected were Montpelier, Waterbury, Barre, Bolton and Richmond. Hundreds of persons in East Hartford, Conn., were driven from their homes and many towns were in darkness. Some villages were practically demolished. In the little town of Bolton, Vt., twenty-one highway workmen were drowned when their boarding house was swept away. The American Red Cross and the army are assisting in relief work. Attempts to carry food by airplane to places which were inaccessible by other means of transportation were rendered almost impossible by the storms which still prevailed, November 5. The health authorities are taking measures to prevent the use of polluted water supplies, and typhoid vaccine is being rushed to the affected districts to assist in the prevention of epidemics.

Awards for Public Efforts in 1927.—The Harmon Foundation, 140 Nassau Street, New York, announces two awards for constructive work in social, civic or industrial fields of public effort: $1,000 with a gold medal to the person who makes a distinct contribution to welfare work in this country, and $500 with a gold medal to the author of that article appearing in any American publication which is of signal benefit in stimulating constructive public opinion in the social or industrial field. Selection will be based not so much on immediate results as on their potential influence on American life. Nominations for awards may be submitted by any person interested, although the foundation has appointed a group of nominators from all parts of the country. The awards last year, administered through the Survey Associates, were the first to be granted in this series; they were received by Miss Ethel Richardson, Los Angeles, for her work in adult education, and by Prof. William Z. Ripley, Nathaniel Ropes professor of political economy, Harvard University, for his article "From Main Street to Wall Street," published in the *Atlantic Monthly*, calling attention to the breach between management for ownership in industrial and public utility groups.

Commonwealth Fund Announces Sites for Rural Hospitals.—Beloit, Kan., has been selected for the location of the fourth rural hospital in the series which the Commonwealth Fund is helping to build as a contribution to improve medical and health conditions in rural districts. Beloit, with a population of 3,315, is the county seat of Mitchell County in north central Kansas. It is on a federal highway and is served by two railways. Wauseon, Ohio, which has been selected for the fifth rural hospital in this series, is the county seat of Fulton County, 35 miles from Toledo. This Ohio district is typically rural with economic resources above the average. It is a center of transportation, trade and medical practice in that section of the state, but its present twelve

bed hospital is inadequate. As a New England community and two southern communities were selected for the first three rural hospitals, the midwestern states were given the preference in locating the next two, although fifteen applications from nine states were carefully considered by the Commonwealth Fund before Beloit and Wauseon were selected. The previous awards were made to Farmington, Maine, Glasgow, Ky., and Farmville, Va., under an arrangement whereby the Commonwealth Fund donates two-thirds of the cost of the construction and equipment, while the local community guarantees the remainder and undertakes the expense of operation.

CANADA

Smallpox Outbreak Grows.—The board of health of Ottawa barred about 6,000 of its 25,000 school children, November 2, from the schools because they had not been vaccinated against smallpox. This was an attempt to prevent further spread of the outbreak, which on that date amounted to about eighty-three cases. Free vaccination clinics were in operation, and a large number of persons were being vaccinated. It was estimated that about 70 per cent of the school children had complied with the order of the board of health.

Society News.—At the annual meeting of the Manitoba Medical Association, recently, Dr. Harry W. Lewis, Angusville, was elected president, and Dr. Henry Bruce Chown, Winnipeg, was elected secretary.——At the twenty-first annual meeting of the Alberta Medical Association, Calgary, September 14-16, Dr. William A. Scanlon, Edmonton, was elected president, and Dr. E. C. Smith, Edmonton, secretary. Among others, Profs. Alfred T. Bazin and Campbell P. Howard, Montreal; Alan G. Brown, Toronto, and Dr. James K. McGregor, Hamilton, gave clinics and addresses.

Personal.—Dr. Ralph P. Smith has been appointed to a position in the pathology department of Dalhousie University Medical School, Halifax, succeeding Dr. Albert G. Nicholls, who has resigned and moved to Montreal where he has three children in school. Dr. G. S. Eadie has taken the position in the physiology department formerly occupied by Dr. N. B. Dreyer. Dr. Louis M. Silver has resigned as professor of medicine at Dalhousie and as visiting physician to the Victoria General Hospital, where he has served for more than twenty-five years. His retirement from the visiting staff was marked by a complimentary dinner attended by the superintendent of the hospital.——Dr. John Beattie, recently prosector in the Zoological Gardens, London, England, has been appointed assistant professor of anatomy, University of Montreal.——Dr. Edward W. Montgomery, professor of medicine, University of Manitoba Medical School, assumed the duties of minister of health and public welfare, September 8.

FOREIGN

Nobel Prizes Awarded to von Wagner-Jauregg and Fibiger.—The New York *Times* reports that the Nobel prize in medicine for 1927 has been awarded to Dr. Julius von Wagner-Jauregg of Vienna for his work on the malaria treatment of general paralysis of the insane. The Nobel prize in medicine for 1926, it is reported, was awarded to Prof. Johannes Fibiger, professor of pathology and anatomy, University of Copenhagen, for his studies in cancer research. The value of the prize is said to be about $32,000.

China Attempts Opium Reform.—An ambitious plan has been announced in China by the Nanking authorities to prohibit opium smoking. Government control of opium is to be put in force, beginning Jan. 1, 1928. An opium prohibition bureau has been organized under the ministry of finance, and a tax of 70 per cent on opium for the first year is to be imposed, with an annual increase until it reaches 200 per cent. All opium addicts are to register, and all drug dealers will be required to take out special licenses costing from $250 to $1,500 a month according to the amount of opium the shop desires to sell. The government, which also aims to control the transportation of all opium, is organizing a special police force to enforce its regulations. An effort is being made to educate the public against the use of opium through propaganda and through the institution of "anti-opium weeks," during which scores of lectures discussing the evils of the drug habit are given to the public and in the schools. The government's program is to extend over a period of three years. Its chief points are: (1) centralization of the government organs for opium suppression; (2) centralization of transportation of opium; (3) organization of a special police force; (4) establishment of opium bureaus in various parts of the country to regulate the handling of the drug, and (5) stopping the cultivation of poppies.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 22, 1927.

School Exclusion and Closure for Infectious Diseases

The Board of Education has issued a revised edition of its memorandum on closure of and exclusion from school for infectious diseases, which is important as representing the latest official view on this subject. The following is a summary for the principal diseases:

SCARLET FEVER

Exclusion of Cases.—When treated in an isolation hospital the child is usually detained for six weeks; longer if any discharges continue from ear, nose, or throat. After return home, the child should not return to school for two weeks. He should, if possible, be examined before admission to school. Then it may be permissible for a child, free from any sign of infection, to return at the expiration of one week.

Exclusion of Contacts.—If the patient has been removed to the isolation hospital, the children living in the same house should be kept away from school for one week from the day on which disinfection, subsequent to the removal of the patient, has taken place. An exception may be made for children who have already had the disease; they may be allowed to return immediately after disinfection of the premises. If the patient is treated at home no other children from the same house should attend school while the patient is in an infectious condition, nor for one week after the end of his period of isolation.

School Closure.—Only exceptionally is it necessary to close the schools. In school, this disease usually spreads slowly from child to child, and not in the explosive manner of measles. Hence, search for slight cases and supervision of contacts should in most instances render school closure needless.

DIPHTHERIA

Exclusion of Cases.—In some districts the patient is regarded as in an infective condition until three swabs taken on different days have proved negative. These should not be taken until at least forty-eight hours have elapsed since the application of any disinfectant to the throat. In certain hospitals, complete recovery from all clinical symptoms is relied on rather than bacteriologic results. In view of the debility following an attack, the return to school should usually be deferred for two or three weeks or longer after the attack, as determined by bacteriologic or clinical methods.

Exclusion of Contacts.—Contacts who give positive swabs should be excluded from school until two or three successive swabs are negative. Tests for virulence should be done when the bacilli persist for long periods without any sign of disease. If the organism is nonvirulent a child may be dealt with as though the swab were negative. When the patient has been removed to the hospital, the children in the same house should be kept away from school for two weeks. During this period they should be closely watched for signs of diphtheria, and should be readmitted only after a final careful examination supplemented by a negative swab. When there are no signs of disease, this period may be shortened if bacteriologic examinations are negative. When the patient is treated at home, no child from the same house should attend school while the patient is in an infectious condition, nor for ten days afterward. This period must be extended in the case of children suffering from sore threat, sore nose, or other signs of possible infectivity until a bacteriologic report establishes the nondiphtherial nature of their condition.

School Closure.—Although diphtheria usually spreads comparatively slowly in schools, it is apt to be persistent, and not infrequently causes serious mortality, especially among children under 5. Therefore when cases occur in an infant school, there should be no hesitation in excluding children below the age of compulsory school attendance. Closure of a school or of a department is justifiable only when the measures described have failed.

MEASLES

Exclusion of Cases.—Patients should be kept from school for three weeks from the appearance of the rash. This period should be extended if there are complications or sequelae.

Exclusion of Contacts.—The children of the same household should be excluded from school until twenty-one days from the date of onset of the last case.

School Closure.—Except for scattered rural populations, this is useless as a means of checking the spread of the disease.

GERMAN MEASLES

Children need not be excluded from school for more than a week from the appearance of the rash. Contacts in the home who have not had German measles should be excluded for three weeks from the date of the last exposure to infection by a patient in the eruptive stage.

WHOOPING COUGH

Measures for the exclusion of children from the schools or closure of schools are similar to those for measles, except that the infection probably lasts six weeks, and the children in the house who attend the infant school should be excluded for this period, or as long as cough continues.

SMALLPOX

Affected children should be excluded until scabs and "seeds" have disappeared. Contacts should be vaccinated or revaccinated, and kept under observation for sixteen days; exclusion from school is not generally necessary.

CHICKENPOX

Affected children should be excluded for three weeks or until all scabs have disappeared. Contacts who have not had chickenpox should be excluded from school for three weeks from the date of the last exposure.

MUMPS

Affected children should be excluded until one week after the subsidence of the swelling. Owing to the character of the disease and the long incubation period, contacts as a rule need not be excluded.

INFLUENZA

Affected children should not be readmitted until examination of the heart and lungs has eliminated possible latent complications and sequelae. In epidemics closure of schools may be an advantage, particularly in rural and small urban districts where the excluded children have few opportunities of coming in contact with one another outside the school.

CEREBROSPINAL FEVER

An affected child will not be fit to attend school until three months from the onset. School contacts should be kept under observation for two weeks. They should be accommodated in open-air classes. Contacts in the home should be excluded for three weeks.

ACUTE POLIOMYELITIS

If the paralytic signs are absent or slight, and the general health is good, the child may be readmitted to school at the expiration of six weeks. In times of epidemic prevalence, exclusion of all children in a particular class, and closure of infant departments, and even of the whole school, may be required. It is important to recognize mild and abortive cases, as they spread the disease. Class contacts should be examined from this point of view, and any child showing symptoms of gastro-intestinal disorder, catarrh, muscular twitchings or neuritis pains should be regarded with suspicion and be kept under supervision, and if necessary excluded from school. Contacts in the home should be excluded from school for a minimum of three weeks.

EPIDEMIC ENCEPHALITIS

If the disease develops in a school, the child should at once be sent home. Search should be made for school contacts, who should be medically examined and watched. Any child exhibiting signs and symptoms suggestive of mild or abortive encephalitis should be excluded from school for a minimum of six weeks. Contacts in the affected household should be kept from school for three weeks after the isolation of the patient. Children who have suffered from the disease should not be allowed to resume school attendance until the general health is completely restored. In favorable circumstances, a child may be permitted to resume school after six months from the time of exclusion; in many instances this period has to be extended to a year or even longer. All children who have suffered from epidemic encephalitis should be kept under medical observation for two years after the attack, as sequelae may appear. As a rule, children showing after-effects, unless in the mildest degree, should be excluded from school, partly for their own sake and partly on account of the effect on other children.

TYPHOID AND ERYSIPELAS

Children from houses in which erysipelas or typhoid have occurred need not, as a rule, be excluded from school, nor is school closure required for either of these diseases.

Britain's First Cancer Clinic

Britain's first cancer clinic has been inaugurated at Greenwich, under the auspices of the Greenwich Borough Council, as the result of a suggestion made by Dr. E. G. Annis, the borough's health officer. For some time, the increasing death rate attributed to cancer has been causing the council much concern. Tuberculosis was once the primal cause of deaths in Greenwich; old age came second, and cancer third. In 1925, however, cancer became a still greater menace, causing eight more deaths per thousand of population than tuberculosis. It was then that Dr. Annis suggested that more should be done to combat cancer, and the clinic is the result. This has been set up for purely diagnostic purposes, and Mr. Davies-Colley, surgeon to Guy's Hospital, will be in attendance. Any one who fears that he or she has cancer can come to the clinic for his advice. Dr. Annis is anxious that persons who fear that they have cancer should immediately seek advice at the clinic. Every physician and nurse in Greenwich has received letters to this effect, and is expected to cooperate in a great campaign to make the experiment a success. Never before in this country has such an effort been made to combat cancer in a single district.

The Production of Synthetic Drugs in Britain

At the opening of the thirty-sixth session of the school of pharmacy in connection with the Pharmaceutical Society of Great Britain, Dr. T. A. Henry, director of the Wellcome Chemical Research Laboratories, delivered an address in which he said that this country had not yet reached the position it ought to occupy as a producer of synthetic drugs. It was true that we had made great progress since the critical year 1914, both in the manufacture of synthetic drugs of established reputation as therapeutic agents and in the intro-

duction of new products of this kind, but it was also true that far too many of the new additions were of foreign origin. This was not creditable. We were as an empire responsible for the well being of an enormous tropical population, yet most of the important new drugs for the treatment of tropical diseases still came from abroad. This was probably due, in part at least, to the fact that as a nation we were naturally and primarily interested in the preventive rather than the curative side of medicine. This was as it should be, but it was no reason why we should not take our share in investigations which would produce new materials for dealing with disease. Many factors weighed heavily against British activities in this direction, but one of the most important had been the lack of facilities for conducting pharmacologic tests and therapeutic trials of new drugs. Further, the number of chemists who were beginning to take an interest in the possible therapeutic value of substances they prepared was steadily increasing, but the number of centers at which the necessary pharmacologic work could be done in Great Britain was lamentably small.

Veterinary Surgeons' Congress; Women as Veterinarians; Glanders in Russia

At the Congress of the National Veterinary Medical Association at Torquay, Prof. F. T. G. Hobday, principal of the Royal Veterinary College, said that there was a grave agitation to establish in this country a veterinary service of public health, which would control the supply of milk and meat. On the continent, for several years, veterinary surgeons had been recognized as the only persons qualified to give an opinion on anything concerning the diseases of animals. Even in the colonies they were miles ahead of Great Britain. It was time that legislation was introduced to establish a public service of veterinary inspectors. They welcomed the admission of women students. While chivalry made them rather shudder when they thought of women often doing the dirty work which accompanied medical or surgical attendance on sick cows or horses, there was an enormous field of untrodden ground in connection with the smaller animals, among dogs, cats, rabbits and even birds, which had a sentimental value not to be calculated in terms of money. Women, obviously, had more gentle hands and showed more affectionate care for domesticated animals, and that would make them ideal animal physicians. The appalling result of the neglect of an efficient veterinary service was shown by what happened in Russia. After the revolution veterinary surgeons suffered, with all other educated persons, and the veterinary service passed into the hands of a cavalry sergeant-major. Within a year, glanders, rinderpest and rabies, three terrible diseases, stalked through the land. He knew, from personal knowledge, that thirty-two Red soldiers were taken out of hospital, and shot because they were suffering from glanders.

The Prevention of Spinners' Cancer

In previous letters to THE JOURNAL, a form of cancer of the scrotum to which cotton spinners are liable has been described. It was attributed to irritation from the machine oil which stains their clothes. The seriousness of the matter is shown by the fact that up to September 30, the authorities had knowledge of 195 cases or alleged cases. After inquiry into a number of them, Dr. Robertson, health officer for Darwen, a Lancashire manufacturing town, has arrived at the important conclusion that it is not the oil that is the cause, but friction. He points out that this form of epithelioma is practically unknown in France and the United States, though spinning is carried on under similar conditions. The difference, he says, is due to the fact that whereas spinners should work in loose clothing, Lancashire spinners wear drawers which are braced up in such a fashion that every time a spinner leans forward in connection with the draw, there is a very decisive friction at the scrotum. This friction, which is repeated hundreds of times each day, amply explains the irritation which ensues, and which Dr. Robertson holds is the cause of cancerous conditions. One of the chief authorities in the compensation department bears out Dr. Robertson's observations, and points to the significant fact that at the end of a week's work, the parts of the spinners' attire which are nearest the seat of irritation are always freest from oil. Although the spinners work barefooted, and repeatedly in the old mills tread on oil, cancer does not result. The Home Office has been so much impressed with the results of the investigations thus far that it proposes, with a view to the extermination of the disease, to institute a periodic medical examination of all spinners above the ages of 30 or 35. At present, the idea is to have an examination about once in every three months.

PARIS

(From Our Regular Correspondent)

Oct. 19, 1927.

International Conference of Psychotechnics

The fourth International Conference of Psychotechnics was held, this week, in Paris, under the presidency of Dr. Toulouse. Many foreign delegates were present. Questions pertaining to the value of intelligence tests and their standardization with relation to vocational guidance were discussed. It was proposed to create intelligence tests of an international character. At the close of the conference, a number of permanent committees were appointed in order to assure international collaboration in various fields, as follows: (1) a committee on the unification of psychotechnical terminology; (2) a committee charged with the study of the psychologic causes of accidents; (3) a committee charged with the study of educative capacity, and (4) a committee entrusted with the duty of preparing psychotechnical tests. Utrecht was chosen as the next place of meeting of the conference in 1928.

Dedication of the Hôtel des Nations Américaines

The Comité France-Amérique inaugurated recently special ceremonies in dedication of the Hôtel des nations américaines, under the chairmanship of the minister of the navy, M. Georges Leygues. Among those in attendance were many prominent Frenchmen and Americans from both North and South America. A medallion by David d'Angers, bearing a likeness of Bolivar, the South American liberator, was presented to M. Edwards.

Celebration of the Centenary of Villemin

The commemoration of the centenary of the birth of Villemin was the occasion of important official manifestations. The inaugural ceremonies took place in the great amphitheater of the Sorbonne, under the chairmanship of M. Painlevé, minister of war, and in the presence of the president of the republic. M. Calmette, assistant director of the Pasteur Institute and director of the Tuberculosis Society (Oeuvre de la tuberculose), spoke on the discovery, by Villemin, of the infectious and contagious nature of tuberculosis, and the skeptical attitude taken by scientific circles toward his observations. General Medical Inspector Savornin, the head of the army medical service, sketched the life of Villemin from his childhood down to his period of scientific training at the Ecole militaire in Strasbourg. The fifty foreign delegates presented, in turn, the felicitations of their governments. A poem extolling Villemin, written by Prof. Charles Richet, who is also a poet, was then read, and the orchestra played a piece of music written, in honor of Villemin, by the composer Gabriel Pierné, who also directed the orchestra. There was a formal reception of the delegates, at the Hôtel de Ville.

The day following, the scene shifted to the Ecole de santé militaire du Val-de-Grâce, where almost the whole time was devoted to addresses on various subjects pertaining to tuberculosis. The next day, also at the Ecole du Val-de-Grâce, another session was held under the chairmanship of the minister of war, at which time a bust of Villemin was unveiled (and likewise a small museum in which were displayed the various apparatus used by Villemin in his experiments was opened), in the presence of an assembly of military physicians who had gathered from all parts of France. On the final day of the ceremonies, a tablet was affixed, in the morning, on the house at No. 31, rue de Bellechasse, where Villemin had lived and had died. In the afternoon, the Academy of Medicine, in which Villemin had formerly served as vice president, held special ceremonies, at which M. Herriot, minister of public instruction, presided. A banquet, at which the minister of public health presided, brought the ceremonies to a close. The government has decided to authorize a special postage stamp bearing the likeness of Villemin, the profits from the sale of which will be turned over to the antituberculosis societies. At the same time, busts of Villemin have been erected at Bruyères (Vosges), where the scientist was born, and at Nancy, at the tuberculosis hospital, which is dedicated to his memory and which bears his name.

News of the Congresses

At the nineteenth congress of French-speaking physicians, there were more than 1,200 registrants, more than half of whom were foreign physicians. Participants were admitted even though they did not come from a French-speaking country but on condition that they presented their communications in French. This requirement put an end to the difficulty which ruined many large international congresses before the war. The inaugural address of the president sought to establish that the social importance of pathologic researches is directly proportional to the influence they exert on the introduction of prophylactic measures. The minister of hygiene, in his response, assured the assembled physicians that his administration would always seek to apply their discoveries in the field of public health, and to protect their professional dignity and financial interests. The last allusion was understood as referring to the upheavals that many fear will be brought about by the new law pertaining to social insurance. The discussions of the congress were restricted to a study of the three main topics on the program.

THE SYMPTOMATOLOGY OF SEPTICEMIAS IN INTERNAL MEDICINE

MM. P. Gastinel and J. Reilly undertook to define the septicemic condition, a subject much discussed. M. Vezeaux de Lavergne of Nancy reviewed all the clinical types of specific acute and chronic septicemias, whether due to known or to unknown micro-organisms. A third paper was presented by MM. Arloing and Dufourt, of Lyons, and Langeron of Lille, on the clinical forms of nonspecific acute and chronic septicemias (staphylococci, streptococci, etc.), in which group they placed tuberculous bacillemia. MM. Leuret and Caussimon, of Bordeaux, designated as quite unreliable the methods by which today the presence of the tubercle bacillus in the blood is determined.

THE PHYSIOPATHOLOGY OF EDEMAS

Three papers were presented on the second topic, "The Physiopathology of Edemas." MM. E. Aubel and P. Mauriac, of Bordeaux, discussed the rôle of ions and the variations in their distribution; M. Govaerts of Brussels considered the part played by the physicochemical reactions of proteins in the pathogenesis of various edemas, and MM. Pasteur-Valléry-Radot and Nicaud, of Paris, dealt with the edemas associated with chronic interstitial nephritis.

THE MEDICAL INDICATIONS AND THE THERAPEUTIC VALUE OF SPLENECTOMY

Three papers were presented on the third topic, "The Medical Indications and the Comparative Therapeutic Value of Splenectomy." MM. N. Fiessinger and Brodin, of Paris, considered the indications and the results of splenectomy in hemolytic icterus, Banti's disease, and chronic purpura haemorrhagica; M. Nanta dealt with the aspects of splenectomy in anemic processes (parasitic and infectious anemias), and M. J. Tapie of Toulouse discussed the outcome in pernicious anemias and leukemias. In general, the discussion did not much favor splenectomy. Montpellier was chosen as the next place of meeting.

The Congress of the French Association of Urology discussed, on the basis of a paper presented by MM. Pasteau and Belot, the various procedures employed at present in the radiologic exploration of the kidneys. The eighth Congress of the Association of Physicians and Surgeons of the Civil Hospitals of France, under the chairmanship of Dr. Reynès of Marseilles, considered problems of social insurance and the abuses of hospital charity, by reason of which many patients in comfortable circumstances pay merely a nominal fee to the administration of the hospital and give nothing to the physician or surgeon, who receives only a modest annual remuneration from the hospital administration. It was decided to make an appeal to the chamber of deputies, on the subject.

NETHERLANDS

(From Our Regular Correspondent)

Oct. 8, 1927.

The Congress on Sanitary Organization

The thirty-second Netherlandic Congress on Sanitary Organization was held, this year, in Amsterdam. The main subject discussed was the prohibition of alcoholic beverages; more particularly, the project of giving the communal councils the right to cancel all licenses to dispense alcoholic beverages, which have been granted since 1904. Before such action can be taken, the proposal must be approved by three fourths of the members of the communal council. A second matter that was discussed was the paper presented by Van der Kaa, who made a strong plea for the erection of a greater number of one-family houses in opposition to the construction of large apartment houses. He brought out that there was no essential difference in the cost of the two types of dwellings.

The Institute of Alimentation

The Netherlandic Institute of Alimentation has published a report on its activities. It contains favorable statements concerning pasteurization of milk by means of electricity. Another question discussed is the possibility of supplying, without danger, untreated milk from supervised sources, at prices that will make it available to the general public. The institute has taken an interest also in the analysis of various brands of cod liver oil. It appears from this report that the vitamin content of cod liver oils varies greatly and that it does not depend on the chemical qualities of the product.

Work for Invalids

The plan is being considered of holding in Amsterdam, in 1928, a congress and exposition at which will be discussed and exhibited the results of assigning work to invalids.

The Degree of Cleanness Found in School Children

The communal medical service of Amsterdam takes an active interest in the cleanness of school children. In its endeavors to eliminate lice infestation, it has secured the passage of a police ordinance that makes it possible to exclude, from school, children whose hair is not cut short.

The ordinance is enforced, however, only in case the parents of a child refuse to cooperate with the school physician. Children are examined at regular intervals as to the cleanness of their bodies. In 1923, of 2,971 young girls examined, 16 per cent were found to have pediculosis. In 1925, conditions were found to be considerably improved. In 1923, examinations of seven different schools disclosed the fact that only 53.2 per cent could be pronounced "absolutely clean." By 1926 the percentage had risen to 74. Continual supervision is desirable because, after the vacations, there is always a relaxation in the thought bestowed on the cleanness of the children.

Exposition of Occupational Hygiene

The Netherlandic Industrial Exposition, which will be held in Rotterdam, from June 1 to Sept. 15, 1928, will contain a section on occupational hygiene and occupational diseases. The chairman of the committee on organization is Dr. N. M. Josephus Jitta. For information, application may be made to the secretary, Dr. J. Sanders, Heemraadssingel, 240, Rotterdam, Netherlands.

The Meeting of the Nederlandsche Maatschappij tot Bevordering der Geneeskunst

The annual meeting of the Nederlandsche Maatschappij tot Bevordering der Geneeskunst was held, this year, in Amsterdam, under the chairmanship of Dr. Thomas, who chose as the subject of his presidential address "The Psychology of Humanity in Relation to Charlatanry." One of the main topics discussed was the basis for the issue of a license to the driver of an automobile. The present text of the regulations governing the examination of applicants for a license covers the following points: (1) absence of mental diseases or infirmities that would incapacitate a person from driving an automobile, such as epilepsy, imbecility, psychosis, alcoholism, ataxia of the arms or legs, and bodily infirmities (heart, kidneys, etc.); (2) required: a sufficient functioning of the arms and legs; (3) acuity of vision (after correction with glasses, if need be) of at least 50/100 in the better eye and 25/100 in the other (if the vision of the better eye is equal to 75/100, the vision of the other eye may be judged sufficient if it is 16⅔/100, either with or without glass correction; the lateral visual field must not be reduced, and hemeralopia must be absent, and (4) audition must be equal to understanding words whispered at a distance of half a meter from one ear and one full meter from the other ear.

A second paper dealt with the subject of the examination that instructors in therapeutic gymnastics should be required to undergo.

The assembly decided to join the Association professionnelle internationale des médecins, the association that constitutes a central bureau which will make a special study of all the social and organized activities of the medical profession.

It had been hoped that the seventy-eighth assembly would deal with the question of postgraduate education in such a manner that supplementary courses of instruction in medicine might be organized. It was found, however, that the great expense involved made it necessary to abandon the project for the time being.

The Chair of Physiology at Utrecht

Professor Zwaardemaker, occupant of the chair of physiology at the University of Utrecht, has resigned his post, having reached the age limit. He will be succeeded by Professor Noyons of Louvain, Belgium.

Medical Hygienists

For a number of years, the Public Health Council has been considering the creation of a higher course in public health for physicians called to occupy official posts in the administration of public health or social medicine. The first course was given during the academic year 1926-1927, under the sponsorship of the faculty of medicine of the University of Amsterdam. The course included microbiology and immunology for two months; then hygiene, statistics, epidemiology, sanitary organization and medical police work for four months. Nine physicians took the course, and eight of them were given the title of doctor of public health.

GENEVA

(From Our Regular Correspondent)

Oct. 10, 1927.

Amok

Dr. Van Loon, professor of psychiatry in the Medical School of Batavia, has had the opportunity to study the special psychoses of the Malay race, which he recently described to the International Institute of Anthropology. Of especial interest is the psychosis known as amok. A seizure of this sort is a thoroughly unexpected and murderous attack by a Malay subject, who throws himself on any one—even members of his own family—and kills or severely wounds several individuals before he has been overcome or, as usually occurs, kills himself. The insane subject seizes on the first arm at hand—gun or knife, more usually the Malay keris—and gives himself up to a massacre. If after the attack the patient can be questioned, it is common to find him in a state of complete amnesia. If he recalls anything, it will be the vision he saw. An enemy arose before him in the form of an armed man or tiger and he fell on his aggressor.

Van Loon refutes Kraepelin's opinion that the amok is an epileptic episode. It is the result of mental distress the etiologic factor in which is an infectious process, usually malaria, typhoid or influenza. On the continent, infections do not produce such severe attacks of insanity, but in the Malay race the emotivity is intense and suggestibility is without equal in other races. These people offer no resistance to a sudden emotion; they quickly lose their heads and are strongly subject to panic. Aided by an infection, it is evident that emotivity and suggestibility increase and lead to the acute mental confusion resulting in the amok.

Exotic pathology has more than once thrown light on European pathology, and Van Loon rightly says that in the domain of psychiatry "the relative simplicity of the symptoms (in oriental races) may help us better to understand our occidental neuroses."

Use of Calmette's Vaccine

The Vandoise League Against Tuberculosis has decided, with the approbation of the Cantonal Sanitary Service, to furnish Calmette's vaccine to all physicians who wish to be supplied with it. As the vaccine must be fresh, the Pasteur Institute at Paris gratuitously supplies the vaccine on the condition that the vaccinated infants shall be followed and that the written results shall always be open to inspection. In order to avoid too large a collection of documents, the league keeps on file cards filled out with all data required by the Pasteur Institute. The league asks the beneficiaries of the vaccine to contribute funds within their means, and these gifts are sent to the Pasteur Institute.

For the past eighteen months the Greek Red Cross has been vaccinating new-born infants with Calmette's vaccine prepared at the Pasteur Institute at Athens; 306 have received the vaccine, and of these, 152 live in the city and are regularly examined; nineteen live in tuberculous surroundings. Fourteen deaths have been registered, one from pulmonary tuberculosis and one from intestinal tuberculosis, the others dying from intercurrent diseases not tuberculous. The infants living in tuberculous surroundings have, so far, not presented any evidence of tuberculosis.

RIO DE JANEIRO

(From Our Regular Correspondent)

Sept. 15, 1927.

Health Society

A number of sanitarians, under the chairmanship of Prof. C. Fraga, director of the national health department, have organized the Brazilian Health Association, as a successor of the old Brazilian Health Society, now extinct. Prof. Fraga was appointed provisional president.

Professor Marchoux at Brazil

Once more Professor Marchoux of the Pasteur Institute of Paris has made a visit to Brazil. Marchoux first visited this country in 1901-1905. In 1925, when he delivered a series of lectures at the French-Brazilian Interchange Institute, he was made an honorary citizen by the municipal council. During his present trip he is lecturing on leprosy at the São Paulo Hygiene Institute.

Aortic Roentgenography

In a recent report, Dr. J. Silveira of the Bahia medical school states that the left posterior oblique position is the best for the study of the thoracic aorta. The cardiac margin of the descending aorta is perfectly visible both in the right anterior and in the left posterior oblique positions, at almost any inclination, while most of its vertebral margin is also visible in the same positions.

Personal

Prof. L. Lapicque of Paris, a physiologist, has been chosen to deliver a series of lectures at the French-Brazilian Interchange Institute.——Dr. W. de Oliveira has been appointed director of public health in São Paulo state, in place of Prof. G. de Paula Souza, who for many years had filled this position, in addition to being professor of hygiene in the São Paulo medical school and director of the Hygienic Laboratory.

Health Congress

The fourth Brazilian Health Congress will be held in December, at São Salvador, Bahia. The program has been limited to six subjects: epidemiology and prevention of plague in Brazil, reporter, Dr. A. L. de Barros Barreto; domestic insects of Brazil (no reporter as yet chosen); biometric measurements in children and adults in Brazil, reporter, Dr. E. Coutinho; Brazilian water supplies, Dr. E. de Maltos; professional orientation in Brazil, reporter, Dr. F. Esposel; spirochete infections in Brazil, reporter, Dr. H. Aragão.

Radium in Cervical Cancer

Professor Faure of Paris delivered before the National Academy of Medicine a lecture on radium therapy in cervical cancer. Statistics on this subject are not strictly verifiable. Radium exerts a clear action on cancer and cures are possible. Faure has only one case of definite recovery with radium. He keeps radium in his hospital, but rather with a view to other and minor uses. Radium may furnish unpleasant surprises, such as recurrences after three, four and five years. With surgery, recurrences in adjoining regions occur after from six to twelve months and at the most after two years. As radium acts beneficially in an inverse ratio to the square of distance, its near action is curative but its remote effect stimulating and therefore harmful. Radium may also cause accidents, occasionally serious, such as destruction of tissue or functional disturbances.

As regards surgery, Faure has behind him more than thirty years of gynecologic practice. With the knife, cures of uterine cancer are more common, especially at the beginning, and may even reach 80 or 90 per cent when the uterus is still mobile. The death rate in operative cases used to be from 10 to 15 per cent, but it has almost disappeared after the introduction of drainage. Faure does not think much of the combination of surgery with radium. He tried that method for ten years, in forty cases, and recurrences took place in twenty-two cases, i. e., more than 50 per cent, while before applying radium recurrences in his practice reached only 39 per cent. Faure limits the use of radium to inoperable cases of uterine cancer and to boundary or doubtful cases, as the latter may thus become operable. In operable cases only surgery should be considered, preferably to be used at an early date.

ITALY

(From Our Regular Correspondent)

Sept. 30, 1927.

Activities of the Society for Maternal and Infant Welfare

According to information supplied by official publications, the national maternal and infant welfare society, from Jan. 1 to June 30, 1927, was engaged in the following enterprises: The number of institutions aided was 233. The amount of money distributed among institutions founded for the protection of mothers and children was $185,000, while $355,000 was used in the administration of summer colonies. The number of colonies aided was 382. The number of children sent to the sea, the mountains, the country and to sunlit regions was about 300,000, which was thus in excess of the number suggested by the government (100,000) as in need of such outings. Two hundred and fifty-seven institutions were inspected, thirty-six of which were found to be in excellent condition, eighty-two in good, forty-eight in fair, and ninety-one in mediocre condition. In addition, eighty-six shelters for nursing mothers were administered, and care was given to 191 children predisposed to tuberculosis, 760 orphans and abandoned children, and ninety-three abnormal children. Also 134 families were aided. Twelve courses in the care and training of children, with 420 enrolled, were organized for physicians; twelve courses for midwives, with 320 enrolled, and eighteen intensive courses for medical directors. There were six ambulant professorial chairs in operation for instruction in the care and training of children, and twenty-five consultation centers were administered.

An Exhibit of Italian Medical Journals

On the occasion of the holding of five medical congresses at Parma, during the month of October, an exhibit of Italian medical journals will be held in that city in the hall of the Esposizione Libraria. The suggestion of holding such an exhibit came from Professor Gabbi, director of the Clinica Medica of the university, and its purpose is to familiarize visitors at the congresses with the present status of the Italian medical press, both as to general and as to special journals.

The Legal Position of Hospital Physicians

At the first Congresso del sindacato medico italiano, Dr. Pesci of Turin presented a paper on the present legal status of hospital physicians in relation to the syndicates. Stating in advance that by "hospital physician" he meant a physician who, on the basis of a competitive examination, is entrusted with the treatment of persons admitted to an institution of mercy, the speaker brought out that the recent law pertaining to syndicates and to associations of public employees recognizes in the hospital physician two forms of professional activity, each quite distinct from the other; namely, the free exercise of the sanitary art, and work performed in behalf of the institution itself. In the latter capacity, the physician is regarded as an ordinary employee, although he does not have the corresponding economic benefits, and hence he cannot hold managerial posts in the syndicates, to which he is admitted solely in the capacity of a free practitioner. The law prohibits, furthermore, the syndicates from intervening in the relations between institutions of mercy and physicians connected with them. Dr. Pesci emphasized, however, the

desirability of permitting physicians of hospitals and psychopathic asylums to occupy any post whatever in the syndicates or of a public nature, and to have their representatives in managerial positions in the syndicates, in order that they may collaborate in the preparation of sanitary and social laws, such as the law pertaining to health insurance, and be in a position to point out to the hospital administrations the best methods to pursue to bring about continued progress in the adoption of diagnostic and therapeutic measures. A resolution was passed incorporating this idea.

The Congress of Stomatology

On the occasion of the twenty-fifth anniversary of the foundation of the Federazione stomatologica italiana and of the special journal *La Stomatologia*, the stomatolgists held their congress at Milan, under the chairmanship of Professor Bellinzona. Professor Cavina of the University of Bologna presented a paper on the subject, "Abscesses and Phlegmons of Dental Origin." Dr. Fasoli of Milan discussed "Surgical Intervention in Conservative Treatment." From his personal experience, he recommended the extirpation of the dental pulp and the filling of the pulp cavities at one sitting, under local anesthesia. Dr. Lippi of Naples referred to the bacterial flora which he had found in periapical granulomas, and which, in his opinion, points the way to the etiologic comprehension of many subacute and chronic septicemias. Dr. Manicardi of Modena spoke on the etiology of dental caries. Having found the streptococcus in the decayed pulp that was still protected by a layer of dentin, he holds, in opposition to the Miller school, that caries must be attributed to bacterial rather than to chemical causes. In proof of his assertion, he presented a number of teeth, originally sound, which, after being kept for some time in an acid medium, had been attacked down to the dentin and showed a decalcification of the dentin but absolutely no signs of caries. The communication of Dr. Manicardi gave rise to considerable discussion.

Professor Cavallaro of Florence discussed the behavior of caries in the third upper molar; Professor Perna of Bari compared the nerve terminations of the healthy tooth with those of the diseased tooth, and Dr. Savaral of Venice considered researches on the cholesterin and calcium content of the blood in persons affected with dental caries.

Two further topics discussed were: "The Treatment of Root Canals," and "The Choice of Materials and Instruments." The congress closed with a visit at the Istituto stomalogico italiano, founded by Carlo Platschick, of which Professor Arlotta is the director.

BERLIN

(From Our Regular Correspondent)

Oct. 15, 1927.

Legislation for the Elimination of Venereal Disease

In Berlin, solution of problems arising out of the law pertaining to the control of sexual disease rests largely on the municipal health service, or, more particularly, the *Hauptgesundheitsamt*, which is making preparation for the time when the new law begins to operate. In order to enlighten the population on the significance and objects of the law, an extensive publicity campaign was organized in Berlin, this week. It was received by the population with the greatest interest. All the duties that formerly devolved on the "morals police" (*Sittenpolizei*) are now taken over by the public health service; more particularly, the enforced examination of suspects and the enforced treatment of infected persons who refuse medical aid. Also all notifications required by the law are sent to the central public health bureau. Among the most important measures is the creation of examination and consultation centers, such as have existed for some time in many large hospitals (Virchow-Krankenhaus, Moabit, Urban, Friedrichshain and Charlottenburg). But it is not likely that these consultation centers, many of which are located in the outskirts of the city, will suffice under the new régime. Provision will be made, first of all, for the more densely populated sections of the city. It is the general plan to combine a therapeutic service with every consultation center, so that their network will extend over all of Greater Berlin. According to the law, any person who is entitled to treatment at the expense of the commune may decide whether he will be treated in one of the therapeutic centers or by a physician with a private practice. However, it will doubtless be necessary to provide for some enforced treatment in the municipal therapeutic centers. It is likewise one of the duties of the health service to see that there are sufficient beds available for venereal patients, in the hospitals. The law does not differentiate between the two sexes, so that there must be a supply of hospital beds available for both men and women. Furthermore, the health service must provide for prophylactic treatment, which will doubtless have to be given not only in the consultation centers but also in the emergency service centers.

Disinfection by Ironing

The pressing or ironing of an article of dress has a certain disinfective value. Prof. M. Hahn, director of the Berlin Hygienic Institute, in collaboration with W. Strauss, recount their researches in the *Deutsche medizinische Wochenschrift*. They performed their experiments with mechanical ironing machines, with which, through the entrance of steam into the ironing plates, a temperature of from 100 to 105 C. can be secured within a few seconds, and, after a comparatively short time, the temperature can be raised to 125 C. The time period is so measured that every fabric, according to its thickness, is exposed to the steaming for from twenty-five to thirty seconds. Thick overcoat materials, which had been smeared with many kinds of dangerous bacilli, were found to be entirely freed from staphylococci and *Bacillus coli* by the ironing process. The short steam treatment did not suffice for the destruction of spore-bearing bacilli. Large quantities of tubercle bacilli placed in trousers' pockets were destroyed by the application of steam for thirty seconds. The fact that woolen blankets can be successfully disinfected by ironing is especially important. Staphylococci and *Bacillus coli* were also entirely eliminated from camel's hair blankets. This mode of disinfection is much more simple and cheaper than that accomplished with large disinfection apparatus, and is of special importance for valuable, delicate material. Spore-bearing micro-organisms must be removed by the large disinfection apparatus, or the ironing process must cover at least eight minutes. Also for disinfection on a large scale the disinfection apparatus will continue to be employed. The use of ironing machines is of value especially for small and middle-sized hospitals, sanatoriums, and bath establishments. Blankets used in hotels and in sleeping cars should always be disinfected in this manner, for the apparatus is not expensive, and is easy to operate. The disinfection of a blanket requires only from two to three minutes, so that twenty-five can be done in an hour.

Marriages

FRANK MONTAGUE LETT, LeCompte, La., to Miss Grace McMurray of Dallas, Texas, October 1.

GEORGE PERRY DUNHAM, Marblehead, Mass., to Miss Annie Laurie Berry of New York, recently.

WILLIAM L. HARDESTY to Miss Dorothea Hockstad, both of Traverse City, Mich., June 18.

THEODORE KENT KEITH, Newton, Mass., to Miss Phyllis Louise Caldwell, recently.

Deaths

Edwin Taylor Shelly ✠ Atchison, Kan.; University of Pennsylvania School of Medicine, Philadelphia, 1881; president of the Atchison County Medical Society; member of the school board; aged 68; died, October 13, of pulmonary embolism, following an injury received in an automobile accident a few days before.

Joseph Ralston Hollowbush, Rock Island, Ill.; St. Louis Medical College, 1880; member of the Western Surgical Association; served during the World War; city physician; formerly on the staff of St. Anthony's Hospital; aged 67; died, October 16, of myocarditis, following coronary thrombosis.

Amasa Elliot Paine, Brockton, Mass.; Georgetown University School of Medicine, Washington, D. C., 1865; member of the Massachusetts Medical Society; Civil War veteran; formerly on the staff of the Brockton Hospital; aged 84; died, September 30, of arteriosclerosis and pyelonephritis.

Alfred Kane, Fort Wayne, Ind.; Fort Wayne College of Medicine, 1902; member of the Indiana State Medical Association; past president of the Allen County Medical Society; aged 49; on the staff of St. Joseph's Hospital, where he died, October 16, of lymphosarcoma.

Lucien Maurice Provosty ✠ New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; professor of physiology, Loyola University School of Dentistry; formerly on the staff of the Charity Hospital; aged 59; died, September 9.

Henry Clay Bagby ✠ Santa Barbara, Calif; Missouri Medical College, St. Louis, 1881; past president of the Santa Barbara County Medical Society; also a dentist; aged 67; died, October 1, near Ventura, of injuries received in an automobile accident.

Herbert Huskisson Cornforth, De Kalb, Ill., Baltimore Medical College, 1909; member of the Illinois State Medical Society; aged 41; died, October 14, in Paris, France, of cerebral embolism while attending the convention of the American Legion.

John Irving Sturgis, New Gloucester, Maine; Medical School of Maine, Portland, 1868; member of the Maine Medical Association; Civil War veteran; formerly member of the state legislature; aged 83; died, August 4, of diabetes mellitus and myocarditis.

Perry Dale Gaunt, Warsaw, Ill.; Hering Medical College, Chicago, 1906; member of the Illinois State Medical Society; formerly member of the state board of health; aged 45; died, October 7, in St. Joseph's Hospital, Keokuk, Iowa, of appendicitis.

August G. Osterman ✠ Seymour, Ind.; Louisville (Ky.) Medical College, 1874; formerly member of the state legislature; aged 74; died, October 13, at the Lutheran Hospital, Fort Wayne, of pneumonia, following a cerebral hemorrhage.

Horace Puckett McWhorter ✠ Collinsville, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1881; past president of the De Kalb County Medical Society; aged 67; died, August 5, at Fort Wayne, of nephritis and pneumonia.

Arthur Clarke Johnson ✠ Spokane, Wash.; Rush Medical College, Chicago, 1901; served during the World War; on the staff of St. Luke's Hospital; aged 52; died, October 5, in Detroit, of injuries received when struck by an automobile.

Sherman Morris Kyes ✠ Oshkosh, Wis.; College of Physicians and Surgeons, Chicago, 1902; past president of the Clark County Medical Society; aged 61; died, October 10, at St. Joseph's Hospital, Marshfield, of cerebral hemorrhage.

Arthur Richards Paine, Brooklyn; Medical Department of Columbia College, New York, 1875; formerly on the staff of the Brooklyn Hospital; aged 81; died, September 29, at Worchester, Mass., of arteriosclerosis and myocarditis.

John Winn Williams, Sandia, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1886; member of the State Medical Association of Texas; aged 65; died, September 30, of asthma and dilatation of the heart.

John Marshall Beffel ✠ Milwaukee; Northwestern University Medical School, Chicago, 1898; formerly secretary of the Wisconsin State Board of Medical Examiners; aged 60; died suddenly, October 22, of angina pectoris.

John Carl Wahl, Scranton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1912; member of the Medical Society of the State of Pennsylvania; aged 39; died suddenly, October 11, of heart disease.

James Edwards Mangham, Reynolds, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; member of the Medical Association of Georgia; aged 56; died, September 26, of coronary thrombosis.

Robert H. Knolle ✠ Lagrange, Texas; University of Louisville (Ky.) School of Medicine, 1897; health officer of La Grange and Fayette County; aged 54; died, October 2, of uremia, following acute nephritis.

Sanford Hamilton Newton ✠ Plattsburg, N. Y.; University of Vermont College of Medicine, Burlington, 1875; formerly a druggist; aged 77; died, September 28, at the Physicians' Hospital, of cerebral hemorrhage.

Andrew Johnson, Moline, Ill.; University of Nebraska College of Medicine, Omaha, 1890; formerly superintendent of the Norfolk (Neb.) State Hospital; aged 67; died, October 15, in Indianapolis, of heart disease.

James E. Roach, Midwest, Wyo.; Maryland Medical College, Baltimore, 1912; member of the Wyoming State Medical Association; medical superintendent of the Midwest Hospital; aged 41; died, September 10.

David W. Ashum ✠ Eau Claire, Wis.; Eclectic Medical Institute, Cincinnati, 1881; formerly on the staff of the Sacred Heart Hospital; aged 73; died, September 3, at Highland Park, Ill., of heart disease.

Wallace Everett Hatch, Boston; Harvard University Medical School, Boston, 1927; served during the World War; intern, Boston City Hospital, where he was found dead in bed, October 13, aged 31.

George Johnstone Dickison, Sault Ste. Marie, Mich.; Trinity Medical College, Toronto, Ont., Canada, 1886; member of the Michigan State Medical Society; aged 66; died, August 18, of nephritis.

George Washington Floyd ✠ Western Grove, Ark.; Gate City Medical College, Texarkana, 1907; past president of the Boone County Medical Society; aged 76; died, August 25, of cerebral hemorrhage.

Abraham Machlin ✠ Passaic, N. J.; University and Bellevue Hospital Medical College, New York, 1899; on the staff of the Passaic General Hospital; aged 55; died suddenly, October 23, of heart disease.

Enos E. Palmer ✠ Ottawa, Ill.; Chicago Medical College, 1890; health officer of Ottawa; on the staff of the Ryburn Memorial Hospital; aged 61; died suddenly, October 6, of heart disease.

Howard Lee Moffatt, Los Angeles; McGill University Faculty of Medicine, Montreal, Que., Canada, 1915; aged 37; was found dead, September 2, of acute dilatation of the heart.

Frederick William Wastell, Harbor Beach, Mich.; Detroit College of Medicine and Surgery, 1907; aged 44; died, October 10, at the home of his father in Detroit, of heart disease.

William Alexander Wright, Corn Creek, Ky.; Hospital College of Medicine, Louisville, 1888; aged 77; died, May 15, at the home of his daughter in Paynesville, Ind., of myocarditis.

William S. Gosdin, Lakeview, Texas (registered by the Texas State Board of Medical Examiners, under the Act of 1907); aged 54; died, April 7, at Memphis, of heart disease.

William C. Schirmer ✠ Brooklyn; Medical Department of the University of the City of New York, 1889; aged 59; died, October 12, at the Mutual Hospital, of acute appendicitis.

George A. Custer Cutts ✠ Litchfield, Minn.; University of Minnesota Medical School, Minneapolis, 1900; on the staff of the Litchfield Hospital; aged 51; died, September 17.

Milton A. Nobles, Philadelphia; Syracuse (N. Y.) University College of Medicine, 1881; aged 69; died, October 24, at the Philadelphia General Hospital, of heart disease.

James Henry Phipps, Clarendon, Ark. (licensed, Arkansas, 1903); member of the Arkansas Medical Society; aged 53; died, September 27, of pneumonia, following influenza.

Alpha Forrest Ayer, Livia, Ky.; University of Louisville School of Medicine, 1894; formerly member of the county board of education; aged 61; died, September 26.

Philip Sheridan Goodman, Sutter Creek, Calif.; Missouri Medical College, St. Louis, 1890; aged 60; died, October 9, at the Hanford (Calif.) Sanitorium, of nephritis.

Charles William Bufkin, Hattiesburg, Miss.; University of Alabama School of Medicine, Tuscaloosa, 1880; formerly a druggist; aged 72; died, October 13, of asthma.

Isaac Weil, New York; Medical Department of Columbia College, New York, 1878; aged 71; died, September 8, of chronic myocarditis and coronary thrombosis.

Moses Theodore Zellers ✠ Hooper, Neb.; Western Reserve University School of Medicine, Cleveland, 1889; aged 66; died suddenly, September 23, of heart disease.

Napoleon A. Farr, Des Arc, Mo. (licensed, Missouri, 1884); formerly member of the state legislature; aged 75; died, September 26, of carcinoma of the lip.

John Harrison Taylor, Providence, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1884; aged 63; died, September 25, of angina pectoris.

Felix Grundy Armstrong ✠ Hubbard, Texas; Memphis (Tenn.) Hospital Medical College, 1898; aged 55; died, October 7, in a sanatorium at Temple.

Samuel Elersley Furry, New York; Jefferson Medical College of Philadelphia, 1880; aged 79; died, October 3, of chronic nephritis and heart disease.

Charles John Lander ✠ San Francisco; College of Physicians and Surgeons of San Francisco, 1910; aged 51; died, October 5, of cerebral hemorrhage.

Elmer L. Kelso, Paxton, Ill.; Chicago Medical College, 1883; member of the Illinois State Medical Society; aged 67; died in October, of myocarditis.

Thaddeus M. Belsher, Sadler, Texas; University of Louisville (Ky.) School of Medicine, 1890; aged 62; died suddenly, September 19, of heart disease.

James W. Sanders, Decatur, Ill.; Chicago Medical College, 1889; aged 63; died, September 30, at the Decatur and Macon County Hospital of carcinoma.

John D. McIver, Dallas, Texas; Kentucky School of Medicine, Louisville, 1892; aged 76; died, October 9, of urethral stricture and pyelonephritis.

Joseph Daniel Harrigan, Jamaica, N. Y., Bellevue Hospital Medical College, New York, 1883; aged 66; died, September 21, of lobar pneumonia.

Charles Ankrum Faber ✠ Milwaukee; Rush Medical College, Chicago, 1897; aged 64; died, October 5, of acute myelogenous leukemia.

Joseph Bennett McMillan, Graniteville, S. C.; University of Georgia Medical Department, Augusta, 1889; aged 69; died, September 11.

Edwin Thomas Murray, East Millinocket, Maine; Yale University School of Medicine, New Haven, 1922; aged 32; died in September.

Thomas Robert Hart, Elizabethton, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1912; aged 63; died, August 15.

Belinda Ellen Egan, San Jose, Calif.; Kansas Medical College, Topeka, 1904; aged 60; died, August 25, of carcinoma of the intestine.

Adam Klemm ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1891; aged 65; died, September 25, of carcinoma of the bladder.

Grant Harden Gustin ✠ Troy, Pa.; Jefferson Medical College of Philadelphia, 1892; aged 59; was found dead in bed, August 10.

Wilbert Charles Warner, Cleveland; Dartmouth Medical School, Hanover, N. H., 1888; aged 63; died suddenly, August 20.

Wade Kinney Wheelis, Beulah, Ala.; University of Louisville (Ky.) School of Medicine, 1885; aged 68; died, September 25.

Floyd Deloss Smith, Cuyahoga Falls, Ohio; Cleveland Medical College, 1896; aged 58; died, October 4, following an operation.

Walter W. Bucklew, Tunnelton, W. Va.; Baltimore Medical College, 1909; aged 45; died, September 26, at Greenfield, Ind.

William Henry Schock, Richfield, Utah; Hahnemann Medical College and Hospital, Chicago, 1881; aged 81; died, April 26.

Samuel Whitaker Price, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1888; died, October 20.

William Burnett, Clearwater, Fla.; Hospital College of Medicine, Louisville, Ky., 1892; aged 62; died in September.

Edwin Conner Warg, Philadelphia; Jefferson Medical College of Philadelphia, 1889; aged 72; died, October 20.

Miller D. Machin, Macomb, Ill.; Keokuk (Iowa) Medical College, 1896; aged 74; died, October 5, of heart disease.

John A. Fuller, Lane, Kan. (licensed, Kansas, 1901); aged 81; died, October 2, of bronchopneumonia.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

WARNINK'S ADVOCAAT NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

When the Council's statement of the consideration of Warnink's Advocaat was sent to its distributors, Julius Wile, Sons & Co., the firm replied that certain revisions of the label and advertising were to be made. While such revision could not make the preparation occeptable for N. N. R., the Council asked to be supplied with copies of the proposed labels and advertising, so that it might consider a revision of its report. Six months have elapsed since the statement was first sent to the agent, but no revised material has been received. The Council, therefore, authorizes the publication of its report. W. A. PUCKNER, Secretary.

"Warnink's Advocaat" (Julius Wile, Sons and Co., New York, distributors) is an egg nog declared to be imported from Holland and to contain 18 per cent of alcohol in the form of brandy and three minims of Fowler's solution to each fluid ounce.

According to the distributors:

"The value of Warnink's Advocaat as a tonic lies, in addition to the fact that it contains 3 minims per fluid ounce of Fowler's Solution, in its nutritive elements embodied in the yolks of eggs. The brandy contained in the tonic is of the finest procurable and the eggs used in its manufacture are guaranteed strictly fresh, the firm of Warnink having its own poultry farms."

The distributors further state that they have been informed by physicians that their preparation is "an ideal vehicle for the administering of Fowler's Solution. . . ." However, the advertising for this alcoholic "tonic" does not feature the presence of the solution of potassium arsenite which is contained in it. Thus the firm's advertising circular, which calls the preparation "the Dutch National Tonic," declares the presence of eighteen per cent of alcohol, and describes it as "a unique Liqueur Tonic composed of an Emulsion of Fine Brandy and the Yolk of Fresh Laid Eggs," but contains no reference to the fact that it contains arsenic.

Further, the label on the package claims that permission for importation and sale has been granted by the United States director of prohibition; gives an extract from a puff said to have been published in the *Lancet* in 1911, according to which it is "an elegant improvement on the mistura spiritus vini gallici of the British Pharmacopeia" [it is not contained in the last edition of the British Pharmacopeia]; declares that "Sportsmen and travelers will find it almost invaluable in consequence of its invigorating and sustaining properties" and that "delicate persons or children will derive great benefit from a tablespoonful occasionally during the day"; but only at the very end of the label, and in inconspicuous type, declares the presence of Fowler's solution.

This lack of emphasis of the arsenic content on the label is likely to lead to the ingestion of dangerous amounts of this drug by the public. It is evident that, although the sale of the preparation is said to be permitted on the ground that its arsenic content places it in the "nonbeverage" class of alcoholic "tonics," its advertising propaganda makes it likely that it will be taken without appreciation of its arsenic content.

Warnink's Advocaat is unacceptable for New and Nonofficial Remedies because the name is not descriptive of the potent constituents—potassium arsenite and alcohol—of the mixture and because the administration of an alcoholic "tonic" in combination with fixed amounts of arsenic and under a noninforming name is irrational, while the method of marketing is likely to lead to its ill advised and harmful use by the public.

PHILIP NEWTON'S MATAMEL

To Avoid a Fraud Order Matamel Quackery Abandons Mails for Drug Stores

"Matamel" has for two or three years past been exploited by one Philip Newton, who writes after his name, "M.D., Georgetown University." Matamel is claimed to be—and probably is—the concentrated sap of the maguey plant. The sap of the maguey is used by the Mexicans in making the local booze "pulque."

Philip Newton, according to our records, was born in 1884 and received a diploma from Georgetown University School of Medicine, Washington, D. C., in 1910. It appears that in 1913 he was assistant professor of physiology in this institution, and from 1913 to 1921, he was assistant professor of anatomy. He has, apparently, not been connected with the school since 1921. In August, 1924, New York papers reported that Newton had been arraigned in the Court of the City of New York on the charge of violating a section of the penal law which prohibits the placing in newspapers of advertisements relating to certain diseases.

According to the advertising put out by Newton, both under his own name and under his trade name, "Newton Laboratories, Inc.," Matamel has been puffed as a cure for Bright's disease, "bladder trouble" and hypertrophy of the prostate. Newton has quoted what purported to be reports from hospitals and physicians, although the names neither of the hospitals nor of the physicians have been given. In September, 1926, the postal authorities decided that it was time to put a stop to the fraudulent use of the mails in the Newton quackery, and the Newton Laboratories, Inc., as well as Philip Newton himself, were called on to show cause why a fraud order should not be issued. Undoubtedly, such an order would have been issued, but, to the disgrace of the medical profession, Newton was able to produce a dozen or more testimonials from physicians in defense of his quackery. Obviously realizing that sooner or later the mails would be closed to him, Newton executed an affidavit providing for the filing of a further affidavit not later than July 31, 1927, in which the Newton Laboratories, Inc., and Philip Newton, together with his secretary (one John J. Dooley), stipulated that the mail-order business operated by the Newton Laboratories, Inc., in the sale through the mails of the product known as Matamel would be discontinued and abandoned and would not be resumed.

This does not mean that the public is no longer to be humbugged by the Matamel quackery. What it does mean is that, commencing August 1, Newton has to split the profits of his quackery with the drug stores. In preparing for the change of methods the Newton Laboratories sent, in July, 1927, a circular letter to those who were on its "sucker list," notifying them that "after August 1, 1927, Matamel will be sold only through drug stores—we are going out of the mail-order business on that date." The recipients of this circular were also told that the Newton Laboratories would "always be glad" to furnish the names of the hundreds of drug stores where Matamel could be purchased. All of which indicates that there is more than one way to skin a cat.

Composition of Tobacco Smoke.—The smoke emitted from any smoldering vegetable matter, including tobacco, contains ammonia gas and pyridine or pyridine derivatives, and it is these substances which produce the irritation of mucous surfaces not infrequently observed in those who smoke; these bodies are responsible for the morning cough, the irritation of the throat and tongue, and the conjunctivitis of the cigaret smoker. They are in every respect objectionable products and add nothing to the pleasure of smoking. If they could be excluded from the smoke it would be all to the benefit of the smoker. Other dried herbs—such, for example, as coltsfoot leaves, at one time sold as a boys' tobacco which was harmless—often produce more pyridine when allowed to smolder than tobacco, but they have none of its calming effects. The pyridine bases are oily volatile liquids, intensely irritant, but, compared with nicotine, of a relatively low toxicity.—Dixon, W. E.: The Tobacco Habit, Norman Kerr Lecture, *Brit. M. J.*, Oct. 22, 1927.

Correspondence

SVANTE ARRHENIUS

To the Editor:—I read with much interest the fine editorial on Svante Arrhenius and his contributions to modern science. Readers will be interested to know that although his work was in the realm of the ions and the remote stars, Arrhenius was a member some fifteen years ago of a royal commission appointed to investigate the subject of vaccination for the Swedish government. This commission was established to advise the government in the matter after a bill had been introduced in the parliament for the purpose of abolishing compulsory vaccination. As a result of the commission's studies, the government decided to retain the practice of universal vaccination. Arrhenius subsequently published a popular book on smallpox and vaccination; this has had a wide distribution and is still in circulation.

BENJAMIN C. GRUENBERG, New York.
Managing Director, American Association for Medical Progress.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TOXIN-ANTITOXIN IN DIPHTHERIA

To the Editor:—What is the reaction of the toxin-antitoxin treatment? Does it ever give rise to constitutional symptoms or cause diphtheria in susceptible persons? The reason for these queries is that I have recently seen several children, from three to five days after the initial toxin-antitoxin injection, who presented a temperature of from 103 to 104.5 F.; pulse, rapid and thready; marked flushing of the face; prostration, and the peculiar grayish muddy looking diphtheritic membrane, in some cases covering the entire fauces. I made a diagnosis of diphtheria (no culture), and administered antitoxin, with complete recovery of all the cases. Please omit name.

M.D., Bethlehem, Pa.

ANSWER.—The toxin-antitoxin treatment for the prevention of diphtheria cannot possibly cause diphtheria in susceptible persons. Such an effect is completely out of the question because the toxin-antitoxin mixture does not contain diphtheria bacilli. In the cases described it appears that diphtheria developed by coincidence a few days after the first toxin-antitoxin injection.

SECONDARY INFECTION AFTER TONSILLECTOMY

To the Editor:—Please explain what might be present in the throat of a woman, aged 26, married, whom I saw two weeks ago. She was in a run down condition and a diagnosis of "bad tonsils" had been made, and a tonsillectomy performed, July 16, 1927. The appearance of the throat indicates that the surgeon was competent. From ten days to two weeks after the operation there were noticed and may still be seen on both sides, especially near the posterior pillar and off to the base of the tongue, yellowish whitish scattered deposits which look like tiny soft coral formations. These bleed a little bit on removal, and in a few days recur. Also the patient tells me that her surgeon touches them with chromic acid, but that they recur. The appearance is not that of diphtheritic or pseudo-diphtheritic membrane at all, but they look something like the fresh "blows" of the "blow-fly." After examining about 2,000 throats and having done more than 500 tonsillectomies, I do not recall having seen anything of this kind. Please advise.

M.D., California.

ANSWER.—It is difficult to say just what this peculiar infection is. It is not likely that it is thrush; more probably it is the condition known as mycosis pharyngis, in which there is a hyperkeratosis of the epithelium or an infection with a mycelium. The latter condition is very obstinate, and the removal of the yellowish white areas is usually followed by recurrence. The usual types of germicidal preparations may be used but are usually without avail. The treatment that usually gives the best results is the destruction of these areas with the galvanocautery, the platinum tip being used at a

dull red heat. After cocainization this procedure is practically painless, but it is best to cauterize only a moderate number of areas at a time, at intervals of from four to five days; otherwise, the throat will be quite sensitive so that swallowing will be difficult.

ALCOHOL AND LONGEVITY

To the Editor:—In the review of "Alcohol and Longevity" (THE JOURNAL, September 24, p. 1084) by Raymond Pearl, the fourth conclusion arrived at by Dr. Pearl from his investigations is stated as follows: "4. The taking of alcohol has a beneficial effect on the race through its selective action on germ cells, killing off the weak and defective, and leaving the strong and sound to survive." The meaning of this statement is not clear to me. Does he mean that weak germ cells are destroyed and strong and sound germ cells are unharmed, so that alcoholic addicts are more apt to have sound progeny than those who abstain from alcohol? If this is his meaning, does not the frequent occurrence of a family history of alcoholism in cases of idiocy and imbecility tend to disprove this statement? Or does his statement mean that alcohol renders constitutionally weak or defective individuals more susceptible to disease and hence only those of exceptionally robust constitution are able to survive the harmful effects of alcohol?

LINDSAY PETERS, M.D., Alameda, Calif.

ANSWER.—The question was referred to Dr. Pearl, who writes: The experimental work on lower animals of Stockard, Danforth and myself leads to the conclusion that ethyl alcohol has a selective effect on the germ cells, of such nature that the weak germ cells, which would normally produce weak and defective offspring, tend to be killed off, by the proper dosage of alcohol, in the gonads. The result of this is that animals alcoholized with the proper dosage tended to have fewer offspring, but more vigorous offspring, than the control animals in the experiments which received no alcohol.

There is no conclusive evidence, one way or the other, as to whether alcohol has a similar effect in human reproduction.

VACCINE TREATMENT FOR INFECTIONS OF UPPER RESPIRATORY TRACT

To the Editor:—I would appreciate information as to the status and technic of vaccine treatment for recurrent upper respiratory infections. Two of my patients are apparently healthy men who work in the finishing and weaving departments of a plush textile mill. In one of them the symptoms consist of frequently recurring attacks of a catarrhal inflammation of the nasopharynx especially marked in the summer months. He expectorates considerable quantities of thin, glairy fluid in the morning; has some cough, nonproductive, and complains of soreness just above the level of the cricoid cartilage. The other patient's symptoms are much the same, except that the site of inflammation is lower in the respiratory tract, consisting of a chronic catarrhal laryngitis with hoarseness of voice and "tight" feeling around the lower part of the chest. Kindly discuss the incidence and treatment of chronic upper respiratory infections of this type among textile workers. Please omit name. M.D., Connecticut.

ANSWER.—Upper respiratory infections, acute or chronic, are due to bacterial infection, usually of a mixed type. Various organisms, as the pneumococcus, streptococcus, staphylococcus, influenza bacillus and *Micrococcus catarrhalis,* may be demonstrated as normal inhabitants in the nasopharyngeal secretions of healthy persons. During seasonal variations or epidemics, some particular variety or group may predominate, particularly some type of the pneumococcus or the influenza bacillus. Bacteriologic examination in the upper respiratory infections does not reveal one specific organism as several varieties are present, perhaps some one predominating, depending on the existing circumstances.

The presence or absence of symptoms interpreted as disease depends mainly on the virulence of the infecting organisms present and the resistance of the individual. It is the latter factor that vaccine therapy is supposed to assist. The results of such treatment must be determined by immunity tests or by clinical results. Advocates of vaccine therapy, either autogenous or stock vaccine, are not able to advance laboratory proof that is convincing, but prefer to depend on the clinical data, which is notoriously uncertain. If benefit or recovery occurs with vaccine therapy, the vaccines are given the credit, but failure is too often attributed to some other cause. Colds, coryza, upper respiratory infections and the like may respond so promptly to the usual drug therapy or even to no treatment whatever that it is impossible and unfair to make the clinical results a basis of proof for the justification of vaccine therapy. Accepting these statements as to the status of vaccine therapy, the technic is of little or no concern.

The two patients, referred to by our correspondent are workers in a plush textile mill. One might question whether these respiratory symptoms, occurring in attacks and especially during the summer months, are manifestations of an allergic reaction or due to an infection.

DICK TEST IN SCARLET FEVER

To the Editor:—A number of authorities, such as Toomey and Kolmer, state that the Dick test is highly specific for testing susceptibility to scarlet fever. Will you please inform me how one can explain the rather frequent reports of patients with scarlet fever giving negative Dick tests at the onset of the disease? Please omit name. M.D., New York.

ANSWER.—The scarlet fever streptococcus enters the upper respiratory tract of those who are infected on exposure. If the person thus infected is susceptible to scarlet fever, the streptococcus may lodge and multiply in the throat. Coincident with the multiplication of the streptococci there is a production of scarlet fever toxin which is absorbed into the blood stream. When a certain degree of concentration of toxin in the body is reached, the rash appears on the skin. Probably the production of antitoxin by the body begins with the first absorption of small amounts of toxin from the throat which takes place from two to four days before the appearance of the rash. In persons who already have some degree of immunity as demonstrated by skin tests which are not strongly positive but are only slightly to moderately positive, the antitoxin produced during this period between infection and development of the rash may be sufficient to neutralize the minute amount of toxin introduced in the skin test but not adequate to neutralize the larger amount of toxin absorbed from the throat. In the cases in which skin tests were made before exposure to scarlet fever and repeated at intervals after exposure, it has been found that the skin test is most likely to become negative early in the course of the disease in persons who are already partially immune to scarlet fever toxin as shown by slightly to moderately positive skin tests. This is in accord with the established facts concerning the rapid development of antibodies on administration of an antigen in individuals previously immunized to some extent to the antigen concerned.

INJURY TO BLADDER FROM LIFTING WEIGHT

To the Editor:—Is it possible to injure the urinary bladder by extreme exertion such as lifting a heavy weight? 1. Some years ago a man, aged about 65, working on the section went to work in his usual health. Probably he had the usual frequency of urination resulting from old men's hypertrophy of the prostate and had to get up at night some, but he had not been under treatment for anything and was able to work. An hour after going to work a train approached and the man undertook to lift a handcar from the track. First he took a heavy water keg off the car, which took all his strength, and then tackled the car; as others of the work crew came up, he collapsed on the ground and had to be taken home. I saw him an hour later. He was standing beside the bed trying to urinate, passing some bloody urine and groaning with pain so that I heard him from the street. Following this he continued to be an invalid, unable to work, and suffered with cystitis and painful urination. He brought suit for damages on the ground that in trying to protect the company's property his bladder was injured by his lifting. Railroad experts said he could not injure his bladder lifting, that there is no such thing as bladder injury or strain from lifting to the limit of a man's strength. They claimed that the man's age explained his bladder symptoms. 2. Recently a robust young man who gave no history of venereal disease or exposure began work for a construction company after he had been in school. His work consisted of handling hundred pound cement sacks all day long. In three days he had to quit on account of painful urination and bloody urine. 3. A man, aged about 55, was digging a cistern; when at such a depth that he could scarcely heave the dirt over the top he made an extra effort, felt a sharp pain in his back, collapsed, and had to be lifted out of the cistern. He then wished to urinate and passed urine as red as blood. I examined this urine. It soon cleared up, and in a few days the patient had no more trouble and had not had any before. This case was evidently a ruptured vessel in the kidney or pelvis. When I reported these cases to a urologist, he said, "How could lifting injure the bladder?" All of them, he stated, were latent stones somewhere. Please omit name. M.D., Kansas.

ANSWER.—Injuries to the urinary bladder by sudden and violent bodily exertion are not only of theoretical possibility but have been repeatedly observed. As predisposing conditions are quoted distention of the viscus and pathologic changes in the bladder wall, weakening its mechanical resistance. Such accidents are frequent among the male sex and in countries in which physical sports are indulged in to a great extent. Assmuth, Seldowitch, Snjetinow and Zucker-

kandl report cases of vesical ruptures due to sudden and forceful contractions of the abdominal musculature during heavy lifting. In the same category belong instances of vesical rupture produced by excessive parturient exertions and forceful straining during the period of excitement of general anesthesia.

TREATMENT OF RED NOSE DUE TO PERNIO

To the Editor:—I have a patient, a man, aged 30, who has a red nose. The rest of the skin of his face is clear, fair, clean and free from blemishes, but his nose is decidedly red, suggesting alcoholism to the lay mind. There are no indications of local disease, such as rhinophyma or acne rosacea, and no discernible surface vessels. The patient does not use alcohol or tobacco, and seems to be in thoroughly good health, except a bit morose over the aspect of his proboscis. The condition is much aggravated by cold weather. Can you suggest any local treatment that will whiten such a nose? Will radium, roentgen ray or carbon dioxide snow applications accomplish such a desideratum?

CHARLES D. HUMBERD, M.D., Barnard, Mo.

ANSWER.—The description fits a mild pernio, a vasomotor paralysis of the blood vessels. As much as is possible, the nose should be protected from cold. A lotion of sulphurated potassa and zinc sulphate, of each 2 Gm. (half a drachm) in distilled water 60 cc. (2 ounces) may be applied at night, or 2 per cent menthol in spirit of myrcia. Mild treatment with roentgen ray, one eighth or one fourth of an erythema dose once a week, may help to decrease the redness. Not more than eight such treatments should be given in a series. Severe applications of any kind should be avoided. Administration of small doses of compound solution of iodine, 0.2 cc. (3 minims) or less, in a full glass of water, after each meal, and the external application of cod liver oil to the nose, are highly recommended.

PAIN AND PRURITUS IN DIABETES

To the Editor:—Can you suggest any effective treatment for the relief of severe pain and pruritus in diabetes mellitus? I have under my care three cases. Insulin has been used and urine is kept sugar free. It seems that insulin treatment has aggravated these symptoms; the patients, especially at night, are tormented by intense pruritus and severe pains. They are doing very well otherwise. I have tried codeine in half grain doses, luminal and allonal in high doses, with no results. Kindly omit name.

M.D., New York.

ANSWER.—The two points in this question must be treated separately. The pain of diabetes is frequently due to arteriosclerosis, sometimes to neuritis, and requires treatment for these conditions. The vasodilators, heat and heliotherapy frequently are of benefit. In some of the arteriosclerotic-diabetic patients, certain observers report (unprinted communication) that insulin may intensify the pain. The pruritus is most often associated with increased blood sugar, even though the urine is sugar free. Sodium bicarbonate by mouth and locally is usually an effective, simple remedy, provided, of course, that the diet is carefully controlled. In severe cases, roentgen-ray treatments have been of value.

"ARTIFICIAL IMPREGNATION"

To the Editor:—I was much interested in your reply to the query on artificial impregnation, October 15. Your reply is certainly correct and complete, with the exception of one important datum.

Assuming that the huband's semen has been found normal, and that the wife's tubes are not occluded, it is essential before performing artificial impregnation to examine the wife's genitalia for spermatozoa after coitus. It is certainly useless to inject a few drops of semen into the cervix when the test just mentioned shows a cervix simply swarming with live spermatozoa.

It was for just such diagnostic reasons that I brought forward my test for sterility. In some cases the test shows live spermatozoa within the cervix, but all entangled in the cervical mucus and unable to proceed forward. You will see, therefore, that in this condition also it would be useless to inject semen into such cervical mucus. In other cases, while the condom specimens show normal live spermatozoa, the specimens from the cervix will show many spermatozoa but all dead. Here, again, it would be useless to inject semen.

The really most important indication for artificial impregnation is when a test shows that the spermatozoa are unable to reach the uterus, because of partial impotence on the part of the husband or of some mechanical obstruction in the female genitals.

I certainly agree with the caution not to undertake the operation too lightly, as serious consequences sometimes result.

MAX HUHNER, M.D., New York.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Memphis, Nov. 14. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

COLORADO: Denver, Jan. 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

DELAWARE: Wilmington, Dec. 13-15. Sec., Reg. Bd., Dr. Henry W. Briggs, Wilmington. Sec., Homeo. Bd., Dr. Henry W. Briggs.

FLORIDA: Winter Haven, Nov. 14-15. Sec., Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

KENTUCKY: Louisville, Dec. 6. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, Dec. 8-10. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bldg., New Orleans.

MARYLAND: Baltimore, Dec. 13-16. Sec., Dr. Henry M. Fitzhugh, Baltimore. Sec., Homeo. Bd., Dr. J. S. Garrison, Baltimore.

MINNESOTA: Minneapolis, Jan. 3. Sec., Basic Science Bd., Dr. E. T. Bell, U. of Minnesota.

NORTH CAROLINA: Greensboro, Dec. 1. Sec., Dr. John W. MacConnell, Davidson.

NORTH DAKOTA: Grand Forks, Jan. 3-6. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 7-9. Sec., Dr. H. M. Platter, Columbus.

OREGON: Portland, Jan. 3-5. Sec., Dr. M. K. Hall, 816 Pittick Bldg., Portland.

RHODE ISLAND: Providence, Jan. 5-6. Sec., Dr. B. U. Richards, State House, Providence.

TEXAS: Fort Worth, Nov. 15-17. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas.

VIRGINIA: Richmond, Dec. 6-9. Sec., Dr. J. W. Preston, Roanoke.

WEST VIRGINIA: Morgantown, Nov. 22. Sec., Dr. W. T. Henshaw, New Capitol Bldg., Charleston.

WISCONSIN: Milwaukee, Dec. 17. Sec., Basic Science Bd., Prof. M. F. Guyer, Madison.

Pennsylvania July Examination

Mr. C. D. Koch, director, Professional Education Bureau of the Pennsylvania Board of Medical Education and Licensure, reports the written and practical examination held, July 5-9, at Philadelphia and Pittsburgh. The examination covered 5 subjects and included 50 questions. An average of 75 per cent was required to pass. Of the 304 candidates who took the examination, 298 passed and 6 failed. Fifteen candidates were licensed by reciprocity, and 6 were licensed by endorsement of their endorsements. The following colleges were represented:

PASSED College	Year Grad.	Number Passed
George Washington University Medical School	(1925) (1926)	2
Georgetown University School of Medicine	(1926)	1
Howard University School of Medicine	(1926)	1
Atlanta College of Physicians and Surgeons	(1913)	1
Emory University School of Medicine	(1926)	1
University of Georgia Medical Department	(1926)	1
Loyola University School of Medicine	(1927)	1
University of Illinois College of Medicine	(1926)	1
Indiana University School of Medicine	(1925) (1926)	2
University of Kansas School of Medicine	(1926)	1
University of Louisville School of Medicine	(1894), (1926, 2)	3
Johns Hopkins University School of Medicine	(1925) (1926)	2
Maryland College of Eclectic Medicine and Surgery	(1913)	1
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1908) (1915) (1926, 3)	5
Tufts College Medical School	(1925) (1926, 2)	3
University of Michigan Medical School	(1926, 2)	2
Washington University School of Medicine	(1925)	1
University of Nebraska College of Medicine	(1926)	1
Albany Medical College	(1895) (1899)	2
New York Homeopathic Medical College and Flower Hospital	(1899) (1917)	2
Syracuse University College of Medicine	(1926)	1
University of Buffalo School of Medicine	(1926)	1
Eclectic Medical College, Cincinnati	(1926)	1
Ohio State University College of Medicine	(1926)	1
Hahnemann Medical College and Hospital of Philadelphia Homeopathic	(1926)	23
Jefferson Med. Col. of Phila.	(1924) (1925, 18) (1926, 50)	69
Temple University School of Medicine	(1925, 3) (1926, 45)	48
Univ. of Pa. School of Medicine	(1925, 15) (1926, 39)	54
University of Pittsburgh School of Medicine	(1925) (1926, 37	38
Woman's Medical College of Philadelphia	(1925, 6) (1926, 8)	14
Meharry Medical College	(1926)	1
University of Tennessee College of Medicine	(1926)	1
Medical College of Virginia	(1926)	2
McGill University Faculty of Medicine	(1926)	1
Queen's University Faculty of Medicine	(1923)	1
University of Toronto Faculty of Medicine	(1903) (1908) (1923) (1926, 4)	7
University of Erlangen, Germany	(1921)	1

FAILED College	Year Grad.	Number Failed
Indiana University School of Medicine	(1926)	1
Jefferson Medical College of Philadelphia	(1926)	1
University of Pittsburgh School of Medicine	(1926)	1
Woman's Medical College of Pennsylvania	(1924)	1
Queen's University Faculty of Medicine	(1906)	1
University of Petrograd, Russia	(1919)	1

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Boston University School of Medicine	(1925)	Kansas, New Jersey
University of Michigan Medical School	(1908) (1923)	(1925) Michigan
Washington University School of Medicine	(1923)	Minnesota
University of Nebraska College of Medicine	(1924)	Nebraska
Columbia University College of Phys. and Surg.	(1912)	Connecticut
Western Reserve University School of Medicine	(1921)	Ohio
Hahnemann Medical College and Hospital of Philadelphia Homeopathic	(1895)	New Jersey
Jefferson Medical College of Philadelphia	(1921)	North Carolina (1925) W. Virginia
Univ. of Pa. School of Med.	(1924)	New Jersey (1925) Maine
University of Texas School of Medicine	(1922)	Texas

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Indiana University School of Medicine	(1925)	N. B. M. Ex.
Johns Hopkins University School of Medicine	(1916)	U. S. Army
Jefferson Medical College of Philadelphia	(1917)	U. S. Navy
University of Pennsylvania School of Medicine	(1924, 2)	N. B. M. Ex.
University of Texas School of Medicine	(1904)	U. S. Navy

* This candidate will receive his M.D. degree on completion of one year's internship in a hospital.

Book Notices

PHARMACEUTICAL BOTANY. A Text Book of College Botany with Pharmaceutical and Medical Applications. Especially Adapted for the Use of Students of Pharmacy and Medicine and as a Reference for Pharmacists, Chemists and Students in Structural and Systematic Botany. By Heber W. Youngken, A.M., M.S., Ph.M., Professor of Botany, Pharmacognosy and Materia Medica in the Massachusetts College of Pharmacy. Fifth edition. Cloth. Price, $5 net. Pp. 692, with 387 illustrations. Philadelphia: P. Blakiston's Son & Company, 1927.

This is a brief but rather thoroughgoing study of botany to serve as an introduction to pharmacognosy and materia medica. After a description of the microscopic and histologic technic, the author devotes an interesting chapter to the life history of the male fern as an intermediate type of plant. He then takes up vegetable cytology, with frequent references to the physiology and chemistry of plants. Plant tissues in general and then the root, the bud, the stem, the leaf, flowers, fruit and seed are taken up in turn. Approximately the second half of the book is devoted to a study of the classification of plants, the official drugs being featured throughout as examples, frequently accompanied by good illustrations. One cannot help wishing, from the standpoint of the overworked pharmacy student not well grounded in Greek, that botanists were less prolific with their Greek nomenclature and less insistant that students assimilate all or most of it. The necessity of learning these strange and difficult words may easily spoil the enjoyment of what ought to be a fascinating study.

THERAPEUTIC MALARIA. By G. de M. Rudolf, M.R.C.S., L.R.C.P., D.P.H., Assistant Medical Officer, Claybury Mental Hospital, London County Mental Hospitals Service. Cloth. Price, $3.85. Pp. 223, with illustrations. London: Oxford University Press, 1927.

This review of the therapeutic value of malaria in general paralysis was written primarily for the physician and the medical student, with two main purposes in view: In part I the author sets forth the most recent information concerning clinical improvements and serologic modifications in the general paralytic patient following malarial therapy. This is preceded by a historical survey of our knowledge of the treatment of general paralysis and a review of the different fever-producing methods used in combating this disease. The author also discusses the theories advanced as to the manner by which malarial inoculation brings about the improvement. The fundamental factors concerned in these different theories are (1) leukocytosis; (2) psychologic; (3) high temperature; (4) metabolic; (5) antibody formation; (6) vasodilatation, and (7) the immunizing reaction against the stroma of destroyed red cells. In part II the author deals entirely with the new disease therapeutically induced to cure the general paralysis; i. e., malarial fever. A detailed discussion of the methods of artificial inoculation with charts and tables of the incubation period, the frequency, height and duration of the malarial paroxysms, variations with different strains of the parasite and changes in the blood picture of the patient as the malarial treatment progresses is given. The endogenous cycle of *Plasmodium vivax* in the blood stream is clearly demonstrated by a beautiful colored plate, and the life cycle of the parasite is described in detail. In closing, the author describes changes in blood chemistry that occur during the malarial treatment, including blood sugar, alkalinity, pigments, coagulability, viscosity, cholesterin, protein, amino-acids, fibrinogen, van den Bergh test and urea, and the method for termination of the fever.

ULTRA-VIOLET RADIATION AND ACTINOTHERAPY. By Eleanor H. Russell, M.D., B.S., and W. Kerr Russell, M.D., B.S., Hon. Actinotherapist, Sun-Ray Clinic, Newcastle-on-Tyne. With forewords by Sir Oliver Lodge, F.R.S., D.Sc., LL.D., and Sydney Walton, C.B.E., M.A., B. Litt. Second edition. Cloth. Price, $5. Pp. 429, with 168 illustrations. New York: William Wood & Company, 1927.

This book contains an excellent chapter on the history of ultraviolet therapy and another on natural ultraviolet radiation. Several chapters are devoted to the description of carbon, tungsten and iron arc lamps and the quartz mercury vapor lamps. These chapters have little interest for the American physician, as they deal mostly with lamps that are used only in Europe. The technic given is complete and useful, but this is followed by many pages devoted to listing apparently all diseases in which ultraviolet radiation has at any time been used. Some of the statements made are, to say the least, startling. For instance: "Sterility. Certain cases are cured by ultraviolet treatment"; and "Paralysis Agitans. We have had an opportunity of treating two cases of paralysis agitans with ultraviolet radiation and diathermy. There has been very marked improvement in one case and slight improvement in the other." These and other remarks on treatment make the book of questionable value to the average physician.

LA COLLAPSOTHÉRAPIE DE LA TUBERCULOSE PULMONAIRE. Pneumothorax artificiel. Interventions chirurgicales. Par Michel Léon-Kindberg, médecin des Hôpitaux de Paris. Paper. Price, 15 francs. Pp. 160, with illustrations. Paris: Masson & Cie, 1927.

The author concludes that artificial pneumothorax is the most effective means of combating tuberculosis of the lungs; this, without derogation of accepted rest and dietetic measures. Discussing the propriety of doing a pneumothorax in the presence of bilateral pulmonary disease, he says that all bilateral cases were once unilateral, and stresses the need of early recognition of unilateral disease. Too much space, it would appear, is devoted to the subject of bilateral lung collapse; too much, in that the procedure is dignified by the attention given it, beyond its deserts. Oleothorax, thoracoplasty, phrenicotomy and division of adhesions according to Jacobaeus' method are well discussed. The material that serves as a base of the theses presented amounts to about 100 cases. The subject is excellently worked up and it is evident that Kindberg is well acquainted with it. The work is proof that France is awakening to the value of radical antituberculosis therapy.

HANDBUCH DER INNEREN SEKRETION. Eine umfassende Darstellung der Anatomie, Physiologie und Pathologie der endokrinen Drüsen. Band III. Lieferung 3. Herausgegeben von Dr. Max Hirsch. Paper. Price, 22 marks. Pp. 591-838, with 68 illustrations. Leipsic: Curt Kabitzsch, 1927.

This number contains a chapter on cachexia strumipriva by Dr. H. Klose and Dr. Georg Büttner of Danzig, and the first part of the chapter on goiter and cretinism by Dr. Hans Eggenberger of Switzerland. The chapter on cachexia strumipriva contains forty-six illustrations and ends with sixteen pages of references to the literature. The subject is handled thoroughly and critically. Of practical interest is the section on the problem whether thyroid administration can completely make up for the total loss of thyroid as is now advocated by a number of surgeons favoring complete thyroidectomy as a treatment of toxic goiter. On this question the author reaches the conclusion that while the question raised is not conclusively answered, clinically or experimentally, yet there is sufficient indication in the clinical literature of the failure of thyroid therapy to counteract completely all the deficiency symptoms of complete thyroidectomy. This conclusion, of course, renders the so-called total thyroid-

ectomy in toxic goiter a highly questionable procedure. The chapter on endemic goiter and cretinism strikes the high water mark in the chapters in this large work that have so far come from the press. Only a part of the chapter appears in this number; the rest is promised in number 4 of the same volume. At that, the section of the chapter in this part runs into 154 pages, with sixty-eight well chosen illustrations. When completed, therefore, it will be a good sized monograph on this important phase of physiologic pathology. The author shows thorough familiarity with the literature, and is critical, comprehensive and conservative in his statements, as well as lucid and clear. If the chapter should become available as a monograph separate from the larger work so that the total cost of the whole work would not be prohibitive to the majority of clinicians and investigators, no physician or laboratory man should be without it. Dr. Eggenberger raises and answers the question whether the universal use of iodized salt as a prophylactic for simple goiter in the goiter belts of the world ever produces iodine injury and specifically leads to increased incidence of toxic goiter. After thorough and impartial discussion of available information from all countries, Dr. Eggenberger answers the question in the negative: There is at present no reliable evidence that iodized salt as recommended and used as a prophylactic for simple goiter produces iodide injury or increased incidence of toxic goiter.

ASPECTS ACTUELS DE LA PHYSIOLOGIE DU MYOCARDE. (Première série.) L'onde d'excitation motrice, son origine, sa propagation, ses manifestations électriques. Par Henri Fredericq, professeur de physiologie à la Faculté de médecine de Liége. Boards. Pp. 300, with 132 illustrations. Paris: Universitaires de France, 1927.

To one familiar with the literature of cardiology of the last twenty years, the name of Henri Fredericq is a guaranty that this volume is scholarly, scientific and down to date. The author shows his intimate knowledge of the subject by his masterly presentation of facts, his frequent reference to the work of others, and his judicial discussion of controversial points. His own productive investigations are much in evidence and enable him to speak authoritatively. Complete as is this book, the author is reserving for a later volume the consideration of many chemical and metabolic questions pertaining to the heart. The five chapters of the present work cover the origin and intracardiac conduction of excitation and contraction, autonomic rhythms of the heart, the physiology of the nodal tissue, neurogenic and myogenic theories of automatism and of intracardiac conduction, the electric manifestations of excitation, the physiologic electrocardiogram, and the nature of auricular and of ventricular systole. There is a bibliographic index of more than thirty pages.

THE ANATOMY OF THE NERVOUS SYSTEM FROM THE STANDPOINT OF DEVELOPMENT AND FUNCTION. By Stephen Walter Ranson, M.D., Ph.D., Professor of Neuroanatomy, Washington University School of Medicine. Cloth. Price, $6.50 net. Pp. 425, with 284 illustrations. Philadelphia: W. B. Saunders Company, 1927.

The third edition of Ranson's book and the large list of medical schools in which it is used as a textbook testify to its deserved popularity among students of neurology. The story of the anatomy of the nervous system is a complex one at best, but here it is told tersely and simply. Questions are discussed adequately in such a manner as never to confuse the reader. Several paragraphs have been added which deal with the latest facts. The underlying principle of introducing the beginning student to the correlation of anatomic, physiologic and clinical facts is still adhered to. An excellent laboratory annual and bibliography round out an ideal text and reference book on the anatomy of the nervous system.

THE ELEMENTS OF PHARMACOLOGY. By W. A. Osborne, M.D., D.Sc., Professor of Physiology, University of Melbourne. Cloth. Price, 10/6d. Pp. 137. Melbourne: W. Ramsay, 1927.

The author has aimed to present the main facts of pharmacology in a concise form. This he has no doubt accomplished, though the brevity of presentation, especially in respect to the practical application of remedies, would make the book hardly sufficient to meet the needs of medical students for any other than review purposes.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

A TEXT-BOOK OF HISTOLOGY. Arranged Upon an Embryological Basis. By Dr. Frederic T. Lewis, Associate Professor of Embryology at the Harvard Medical School, and Dr. J. L. Bremer, Associate Professor of Histology at the Harvard Medical School. This is a revision of the second edition of Lewis and Stohr's Textbook of Histology, based on the fifteenth German edition of Stohr's Histology. Cloth. Price, $6 net. Pp. 551, with 485 illustrations. Philadelphia: P. Blakiston's Son & Company, 1927.

New edition of standard histology.

CONDITIONED REFLEXES. An Investigation of the Physiological Activity of the Cerebral Cortex. By I. P. Pavlov, Director of Physiological Laboratories in the Russian Academy of Sciences and the Institute of Experimental Medicine. Translated and edited by G. V. Anrep, M.D., D.Sc., Lecturer in Physiology in the University of Cambridge. Cloth. Price, $9. Pp. 430, with 18 illustrations. New York: Oxford University Press, 1927.

Excellent presentation of epoch making lectures by the master physiologist.

FEEDING AND THE NUTRITIONAL DISORDERS IN INFANCY AND CHILDHOOD. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Cloth. Price, $4.50 net. Pp. 566, with 45 illustrations. Philadelphia: F. A. Davis Company, 1927.

New edition of standard work thoroughly revised with relation to recent investigations.

THE CHARACTERS OF THE HUMAN SKIN IN THEIR RELATIONS TO QUESTIONS OF RACE AND HEALTH. By H. J. Fleure, Professor of Geography and Anthropology, University College of Wales. The Chadwick Trust. First lecture in memory of Sir Malcolm Morris, M.D. Paper. Price, 85 cents. Pp. 32. New York: Oxford University Press, 1927.

A naturalist's conception of the human skin.

THE NATURE OF MATTER, GRAVITATION AND LIGHT. By Albert P. Mathews, Ph.D., Professor of Biochemistry, University of Cincinnati. Cloth. Price, $3.50. Pp. 222. New York: William Wood & Company, 1927.

Complicated explanations of complicated subjects.

THE SPEAKING VOICE. A Revelation of the Power of the Human Voice and a Study of Its Possibilities. By Amelia Summerville. Cloth. Price, $1.50. Pp. 75. New York: Avondale Press, Inc., 1927.

Mystical and fantastic thoughts of little or no value as contributions to the subject.

TWENTIETH CENTURY CRIMES. By Frederick A. Mackenzie. Cloth. Price, $3 net. Pp. 273, with illustrations. Boston: Little, Brown & Company, 1927.

Brief presentations of some of our most interesting murders.

THE PLAGUE IN SHAKESPEARE'S LONDON. By F. P. Wilson. Cloth. Price, $4.25. Pp. 228, with illustrations. New York: Oxford University Press, 1927.

Presentation and analysis of Dekker's plague pamphlets.

SOME FAMOUS MEDICAL TRIALS. By Leonard A. Parry, M.D., B.S., F.R.C.S. Cloth. Price, 10/6. Pp. 326. London: F. & A. Churchill, 1927.

Brief résumés of data in many cases involving physicians or medical testimony.

DREAMS. By Percy Goldthwait Stiles. Cloth. Price, $1.50. Pp. 80, with illustrations. Cambridge: Harvard University Press, 1927.

Readable presentation of current data and views on dreams.

THINGS USUALLY LEFT UNSAID. By Chas. D. Center, M.D., F.A.C.S. Cloth. Price, $2.50. Pp. 203. Quincy, Ill., 1927.

Personal impressions and reminiscences of the war.

LA SECRECION DE ADRENALINA. Por Ernesto A. Molinelli. Tesis: Trabajo del Instituto de Fisiologia de la facultad de medicina de Buenos Aires. Paper. Pp. 325, with illustrations. Buenos Aires, 1926.

ANNUAL REPORT OF THE SANITARY ENGINEER OF THE REPUBLIC OF HAITI FOR THE FISCAL YEAR 1925-1926. Paper. Pp. 189, with illustrations. Port au Prince, 1926.

ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MARYLAND FOR THE YEAR ENDING DECEMBER 31, 1923. Paper. Pp. 177. Baltimore, 1926.

Medicolegal

Examiners of Sanity of Defendants—No Privilege Law

(State v. Brasseaux (La.), 112 So. R. 650. State v. Genna (La.), 112 So. R. 655)

The Supreme Court of Louisiana says, in the Brasseaux case, that Brasseaux and Genna were indicted jointly for murder, but were tried separately, and both found guilty. Brasseaux filed a motion to have a commission appointed to examine into his present sanity, before entering a plea to the indictment, and requested the appointment of an alienist named in the motion as one of the members of the commission. This request was refused by the trial judge on the ground that the commission of experts should be impartial, that the court is vested with much discretion in investigating the mental condition of a defendant at and immediately preceding the trial, and because of the great expense, trouble and delay in procuring the services of the alienist in question, who resided beyond the jurisdiction of the court. The defendant contended, however, that, under act 68 of 1918, he was entitled to have his physician present as a member of the commission to examine him as to his present mental condition. The defendant's contention was without merit. Act 68, relative to the examination and commitment of insane persons, is not applicable to persons charged with crime and who may set up insanity as a defense, or who may plead present insanity. The ruling of the judge was correct.

In the Genna case the supreme court says that defendant Genna did not move for a commission to inquire into his present sanity, but suggested in his motion for severance that his defense would be "mental irresponsibility." A commission was appointed and reported both of the accused presently sane, but the result of that examination was never laid before the jury which tried Genna (nor before that which tried Brasseaux), since under Louisiana jurisprudence the jury had nothing to do with that question.

A little later the court says that bills of exception were reserved to the admission in evidence of the testimony of three expert physicians as to the present sanity of the accused. The grounds of objection were that they had examined him as a commission appointed by the court without being asked to do so by the accused; that the examination amounted to a forcing of the accused to give testimony against himself. It was the duty of the judge, appealing to "the humanity of the court," on a suggestion from any one, or even ex mero motu (of his own accord) if he had any doubts, to inform himself that the accused was in a mental condition to understand his position and present his defense. And the method of procedure to that end was a matter entirely within his own discretion. The report of the experts was made to the judge only, and was never laid before the jury. They testified as experts only, and the fact that they examined the accused at the request of the court was never made known to the jury. But this court is far from saying that it would have made any difference had it been made known to the jury that their examination had been made at the request of the court. It would make no difference why they examined the accused as to his sanity; the relevant fact was that they did make such an examination and that the result of that examination was laid before the jury by their testimony given in open court in his presence. This court fails to see wherein the accused was forced to give evidence against himself. He was forced to do nothing. He was looked at and spoken to; but even a cat may look at a queen, and no one need answer when spoken to unless he wishes to do so. The court finds no error in admitting the testimony of these experts.

There is no law in Louisiana on the subject of privilege, article 6, section 12, of the constitution of 1921 not being self-operative. It will be time enough to interpret such a statute when one is passed; but this much is certain—that any such statute or general rule of law on that subject, intended to prevent the disclosure of frailties and imperfections, will never be interpreted by any court (unless clearly obliged to do so) as meaning that one who is accused of crime may overwhelm a jury with evidence of his insanity and shut off the evidence of any professional man with whom he has come in contact and done business as a sane man, for any statute which would have to be so interpreted would undermine and overthrow the very foundation of all criminal proceedings. The question of privilege was raised in connection with the testimony of a private practitioner whom the accused had consulted, but the physician violated no confidence whatever—he testified simply that the accused acted always as a sane man.

A bill of exception was reserved to the fact that the district attorney asked an expert physician called by the defense how much he was receiving to testify, and thereby caused some laughter in the courtroom. The judge (liberally) excluded the answer, and says he heard no laughter; that there was certainly no disorder. The bill did not state what further action was requested of the judge, if any. It presented nothing for the consideration of the supreme court.

Rehearings were denied in both cases.

Not "Under the Care" of a Physician

(De Fazio v. Metropolitan Life Ins. Co. (N. Y.), 222 N. Y. Supp. 60)

The Supreme Court of New York, appellate term, first department, says that to this action on a life insurance policy the defense was set up that the insured had made material misrepresentations, in that she had represented that she had not been under the care of any physician for five years prior to the date of her application for insurance. The representation in this case was, not that the insured had not consulted or been treated by any physician within five years of the application, but that she had not been "under the care" of a physician during that period. It was not shown that she was under the care of the only physician licensed to practice medicine in New York called by the defendant, because the definite testimony with respect to treatment by that physician was that he merely called once and told the plaintiff to give the insured a hot drink for a cold, and the testimony of an Italian physician, not admitted to practice medicine in the state of New York, was that he merely "advised" the insured two or three years before she died. It followed that the direction of a verdict for the defendant company was error; and the judgment on such verdict is reversed and judgment directed for the plaintiff.

Date of Conception—A "Living" Child Under Will

(In re Wells' Will (N. Y.), 221 N. Y. Supp. 714)

The Surrogate's Court, Westchester County, New York, says that so far as it could find, or had been brought to its attention by the research of counsel, there is no other case in the law books dealing with the question of conception as raised in the instant case. One of the provisions of the will of Mrs. Wells, who died on May 22, 1922, created a trust estate to be divided "into as many equal parts as I may have grandchildren living at the time of my decease." One grandchild, Elizabeth Louise Davis, was born eight months and fourteen days after the death of the testatrix; namely, Feb. 6, 1923. Was she in being at the time of the death of her grandmother on May 22, 1922; had conception of the child taken place prior to the death of her grandmother? If in being at the time of the death of her grandmother, would she partake of the fund mentioned?

It is the court's opinion that the testatrix did not, by her use of the words "living at the time of my decease," limit the class of grandchildren to those whom she knew had been born at the time of her death. Therefore if this child was "living" at the date of her grandmother's death, she would take under the foregoing provision of the will. If the child was conceived prior to the death of the testatrix, she was "living" on May 22, 1922. The word "living" is defined by the lexicographers as meaning "having life; the state . . . of being alive." It is well settled that a child en ventre sa mere, which is subsequently born alive and capable of living, is considered a child living, so as to take a beneficial interest in a bequest or devise where the description is "child living." In both England and the United States the result to

include a child en ventre sa mere seems now to be uniformly reached when the devise runs to children or grandchildren as a class, to a son, or to one living at a particular time. It is to the child's benefit to hold him born. When it is detrimental to the child to regard him as born, two American courts have not included him—Virginia and Pennsylvania. In view of the rareness of the cases in which it is not for the child's benefit to hold him born, and of the inaccuracy attendant on attributing to testator's intentions in regard to circumstances obviously unforeseen in the will, it would seem on the whole better to consider a child en ventre sa mere as born. A doubt did at one time exist as to whether the children would take who come under the description of children "born"; but that question also has been determined in favor of the child.

Was Elizabeth Louise Davis conceived and living prior to the date of her grandmother's death on May 22, 1922? "Conception," in its obstetric sense, means the union of the male and female elements of procreation, from which union a new being is developed. The testimony of a medical expert regarding the time of conception was to the effect that the medical profession is in a position of uncertainty, and its only recourse now is to guess at the exact date. Because of this indefiniteness in the medical profession, the courts fall back on the ordinary length or duration of the period of human gestation of 280 days as a phenomenon of life, as a matter of common knowledge, of which the courts will take judicial notice. Taking the 280 days as the normal period of gestation, counting back from the date of birth, Feb. 6, 1923, would make May 2, 1922, the probable date of conception of Elizabeth Louise Davis. There is a presumption that a child is conceived nine months, or 280 days, before its birth, and when the child is a product of marital relations, the presumption is that the conception came through intercourse by the husband. When no evidence is offered to rebut this presumption, it becomes conclusive.

From the foregoing and other methods of figuring, the court finds, on the facts of this case, and as a matter of law, that Elizabeth Louise Davis was conceived on May 1, 1922, and was a child en ventre sa mere on May 22, 1922, subsequently born alive and capable of living, and was and is a living child for all purposes pertaining to her property rights under her grandmother's will.

Treatment of Cancer with Alleged "Oil of Radium"

(Harris v. Graham (Okla.), 255 Pac. R. 710)

The Supreme Court of Oklahoma, in affirming a judgment for $7,500 actual and $2,500 exemplary damages in favor of plaintiff Graham, holds that, in an action for damages based on fraud, in pretending to be a physician and prescribing a sure remedy for a disease, resulting in personal injury to the plaintiff, if there is any competent evidence tending reasonably to support the verdict of the jury, the judgment rendered pursuant thereto will not be disturbed by this court on appeal. In an action as stated, it is not error, but correct, for the court to instruct the jury that, if it finds from the evidence that the defendant has been guilty of fraud toward the plaintiff, it should find for the plaintiff, and in determining the amount of damages sustained, may take into consideration any injury to the plaintiff's health, any pain or suffering caused by the fraudulent acts of the defendant; and it is not error, but correct, for the court to instruct the jury that it may take into consideration the facts and circumstances, if any, tending to show that the plaintiff's disease was aggravated, or whether treatment thereof was delayed or made unpractical. In such an action it is not error, but correct, for the court to charge the jury that, if it finds from the evidence that the defendant practiced a fraud on the plaintiff in pretending to be a physician, and treated her to her injury, and she submitted to the treatment in reliance on such fraud, then it should find damages in such amount as the evidence showed to be the result of such fraud.

The plaintiff alleged that she had a cancerous growth on her left breast that was curable when she consulted the defendant, who held himself out as being a physician who was able to cure cancers; that he diagnosed her case by rubbing the fingers of his left hand along on her left arm, and then informed her that she did not have cancer; that she did not have any "virus" in her blood; that it takes "four degrees for cancer"; that she had a growth that would develop into cancer, if left without treatment; that he showed her two 16-ounce bottles filled with a reddish fluid, which he said was "oil of radium"; that the two bottles contained sufficient medicine to cure her, but she might have to take half a bottle more; that she could rub a little of one bottle on the surface of the growth every day and take two teaspoonfuls internally every day; that she paid him $125 for the two bottles of medicine, and proceeded to follow his directions; that when she had taken all the medicine and went to his office he ran his fingers along her left arm, and exclaimed: "What have you been doing? There is virus in your blood now"; and offered to furnish more of the "oil of radium" of a "higher specific," but it would cost her $45. The evidence was deemed sufficient to show that the defendant was not a physician, and that his manner of diagnosing was absurd; and the jury was deemed warranted in finding from the evidence that the defendant practiced fraud and deceit on the plaintiff, to get her money from her, knowing that the remedy he offered was worthless as a curative agency, and this remedy was not only worthless but aggravated the development and caused her to suffer, and all of the acts and pretensions of the defendant were the proximate cause of her delay and failure to obtain scientific and skilful treatment until it was too late.

It is held that there was no error in a refusal to instruct the jury that treatments of cancers by one of a certain belief or theory of treatment, when charged with fraud and deceit in damages, can only be judged as to whether he was guilty by these theories, which were accepted by the authorities in that peculiar class of treatment, and not by treatment or theory of some other and different theory—because there was no evidence whatever to support any theory claimed by him. He was a violator of the law, and guilty of a misdemeanor in attempting to practice medicine without complying with the requirements of the statutes to authorize to practice medicine, and it could not be said that he had any theory as to the practice of medicine in defense to the plaintiff's cause of action.

In denying the defendant's petition for a rehearing, the supreme court says that he admitted having diagnosed the plaintiff's case; he furnished a remedy; he guaranteed a cure; and while he collected $125 for the "harmless concoction" and not directly for the diagnosis and treatment, he did so collect it indirectly, and he thereby violated the provisions of section 8318, compiled Oklahoma statutes 1921, in which it is provided: "Every person shall be regarded as practicing medicine, . . . who shall for a fee or compensation treat disease, . . . by any drugs, surgery, manual or mechanical treatment. . . ." The defendant manually, by feeling of the plaintiff's arm examining her, diagnosed her disease and prescribed a treatment therefor. He was therefore liable in civil damages for the detriment suffered by reason of his having violated an express statute. A person violating the statute does so with knowledge that one of its natural and probable consequences may be detriment caused both in pain and suffering and in neglect of proper medical attention.

Society Proceedings

COMING MEETINGS

District of Columbia, Medical Society of, Washington, January 4. Dr. C. B. Conklin, 1718 M Street, N.W., Washington, D. C., Secretary.

Philippine Islands Medical Association, Manila, December 14-17. Dr. A. S. Fernando, College of Medicine, University of the Philippines, Manila, Secretary.

Radiological Society of North America, New Orleans, November 28-December 2. Dr. Robert J. May, 5005 Euclid Avenue, Cleveland, Secretary.

Society of American Bacteriologists, Rochester, N. Y., December 28-30. Dr. J. M. Sherman, Dairy Industry Building, Ithaca, Secretary.

Southern Medical Association, Memphis, Tenn., November 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Surgical Association, Augusta, Ga., December 13-15. Dr. R. L. Payne, Medical Arts Building, Norfolk, Va., Secretary.

Western Surgical Association, Omaha, December 8-9. Dr. Harry P. Ritchie, Lowry Building, St. Paul, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

174: 299-438 (Sept.) 1927

*Human Constitution: V. Psychologic Panel. G. Draper and R. B. McGraw, New York.—p. 299.
*Bone Development in Diabetic Children. L. B. Morrison and I. K. Bogan, Boston.—p. 313.
Erroneous Diagnosis of Raynaud's Disease in Thrombo-Angiitis Obliterans: I. E. V. Allen and G. E. Brown, Rochester, Minn.—p. 319.
*Id.: II. Thrombo-Angiitis Obliterans of Lower Extremities with Pulsating Pedal Arteries. E. V. Allen and G. E. Brown, Rochester, Minn. —p. 329.
*Blood Sedimentation Test in Normal Men and Women. E. M. Greisheimer, Minneapolis.—p. 338.
Addison's Disease, Suprarenalopathies, Sclerosis of Gland of Internal Secretion. E. G. Wakefield and E. E. Smith, Washington, D. C.—p. 343.
Behavior in New-Born. L. Taylor-Jones, Washington, D. C.—p. 357.
Adenoma of Salivary Glands. J. McFarland, Philadelphia.—p. 362.
*Effect of Parathyroid Hormone on Blood Coagulability: Jaundice. L. M. Zimmerman, Chicago.—p. 379.
*Hypertension of Pulmonary Circulation. E. Moschcowitz, New York. —p. 388.
Myositis Ossificans Progressiva. A. R. Koontz, Baltimore.—p. 406.

Human Constitution.—A method is presented by Draper and McGraw for studying and charting the psychic pattern of an individual. There are demonstrable differences between the psychic patterns of members of the gallbladder and ulcer races, respectively. In general, the psychic pattern of the gallbladder race displays stability of mood, little fearfulness and slow reactivity. The ulcer group, on the other hand, shows less mood stability, rapid expenditure of emotional energy, great fearfulness and quick adjustment to changes in the environment. They are ideal opportunists and mental sprinters; and, while they have little endurance, they are promptly rehabilitated by food, short periods of rest and the relief of anxiety.

Bone Development in Diabetic Children.—Morrison and Bogan found that bone development is in advance of the chronologic age in children with diabetes of recent onset, and is below the chronologic age in children with diabetes of long standing. Narrowness of the shaft and thinness of the cortex characterize the diabetic children of long standing. Bone atrophy occurs in a certain number of children who develop diabetes before the ninth year, but has not been found above that age. Transverse striae of the bones are found in a larger percentage of diabetic children than of normal children, but the authors failed to associate a transverse line with the onset of the disease.

Thrombo-Angiitis Obliterans.—In approximately 5 per cent of the cases of thrombo-angiitis obliterans (Buerger's disease) seen at the Mayo Clinic, the pulsations of the dorsalis pedis and posterior tibial arteries were normal. The occluding vascular lesion involved the digital and interosseous arteries, or extended into the plantar, metatarsal or tarsal arteries. The signs of vascular obliteration were confined to the distal part of the foot and toes. Because of cyanosis or other color changes and normally pulsating arteries, Raynaud's disease was the usual diagnosis before admission. Cases reported in the male as Raynaud's disease with demonstrable changes in the small arteries are probably most frequently cases of thrombo-angiitis obliterans. All the accessible arteries of the extremities should be carefully palpated as a routine, as occlusion frequently occurs in other extremities and thus furnishes a clue as to the nature of the disease. Four cases presenting typical symptoms of thrombo-angiitis obliterans distal to area of the normally pulsating pedal arteries are presented with pathologic data.

Sedimentation Rate of Normal Subjects.—The sedimentation rate showed some variation from week to week among thirteen normal men examined by Greisheimer. The sedimentation rate showed slightly more variation from week to week (exclusive of menstrual periods) among eighteen normal women than among the men. The averages show that the rate of sedimentation is faster in women than in men. The sedimentation rate during the menstrual periods is not faster than between periods. In every case studied, as rapid a rate was found between periods as during the periods.

Effect of Parathyroid Hormone on Blood Coagulability.—Elevation of the calcium content of the blood by the injection of parathyroid hormone-Collip did not have a constant effect on the coagulation time of the blood in normal or icteric patients or in animals examined by Zimmerman. No demonstrable changes in the serum calcium level as a result of common bile duct obstruction were observed. A regular delay in coagulation was seen in the cases of obstructive jaundice studied. No clinical improvement in the condition of icteric subjects could be seen following an increase in the available circulating calcium as obtained by the injection of parathyroid hormone. From the results of these experiments, it would seem that increasing the calcium concentration of the circulating blood does not have any virtue in diminishing the coagulation time, either in the presence or absence of jaundice.

Hypertension of Pulmonary Circulation.—Moschcowitz believes that hypertension of the lesser circulation is common. It passes generally under the name of "pulmonary congestion" and "right sided insufficiency," or "arteriosclerosis of the pulmonary vessels." It is caused by any lesion that increases the peripheral resistance within the lesser circulation. The most common causes are mitral disease, especially mitral stenosis; emphysema, whether primary (senile) or secondary (asthmatic); infiltrating lesions of the lung (chronic tuberculosis with induration; bilateral pleural synechiae; chronic interstitial pneumonia, tumors); kyphoscoliosis; patent ductus arteriosus, and communications between the two sides of the heart. A sustained hypertension of the lesser circulation leads to arteriosclerosis of the pulmonary vessels. The physical signs of hypertension in the lesser circulation are those brought about by the compensatory mechanism. In the main, these are increased venous pressure; accentuation of the second pulmonic sound; dilatation and hypertrophy of the right heart; dilatation of the pulmonary conus; cyanosis; dilatation of the superficial veins (especially pectoral); enlargement and tenderness of liver; lowered kidney function and infarction of the lungs. A transient (usually terminal) hypertension of the lesser circulation arises under a number of other conditions. The so-called Ayerza's disease is not a disease, but a syndrome developing from any lesion that causes hypertension and consequent arteriosclerosis of the lesser circulation. The constant relation of syphilis to this disease is not proved. Edema of the lungs may either follow or cause hypertension of the lesser circulation. Changes in cardiac rhythm cause hypertension of the lesser circulation only when myocardial insufficiency arises. There is a likelihood that cirrhosis of the liver associated with cardiac disease is the result of the increased venous tension within the hepatic area and of an hepatic arteriocapillary fibrosis. Hypertension of the lesser circulation may be the mechanism of the hitherto unsatisfactorily explained cyanosis in congenital heart disease.

American J. Ophthalmology, Chicago

10: 647-726 (Sept.) 1927

Essential Atrophy of Iris. J. M. Griscom, Philadelphia.—p. 647.
Arterial Spasm in Production of Occlusion of Branches of Central Artery of Retina. H. P. Wagener and J. F. Gipner, Rochester, Minn.—p. 650.
Occlusion of Pupil with Iris Bombé and Secondary Glaucoma: Recovery of Vision After Four Operations. J. Green, St. Louis.—p. 657.
Procedure for Cataract Extraction. J. L. Pavia and M. Dusseldorp, Buenos Aires.—p. 661.
Protein Therapy in Practice. B. W. Key, New York.—p. 666.
Fragments of Glass in Cornea Five Years Shown by Slit Lamp. L. W. Jessaman, Boston.—p. 672.
Splinter of Iron on Retina. J. Fejer, Budapest, Hungary.—p. 674.
Routine Keratometry. D. Smith, Bridgeport, Conn.—p. 677.
Peripheral Iridectomy in Cataract Operation. M. Nida, Paris.—p. 684.
Metastatic Phlegmonous Panophthalmitis. G. N. Brazeau, Milwaukee. —p. 685.

Annals of Surgery, Philadelphia

86: 321-480 (Sept.) 1927

*Final Results of Gastric Resections for Cancer. M. Persson, Stockholm. —p. 321.
*Colloidal Lead Treatment of Malignant Neoplasms. W. S. Stone and L. F. Craver, New York.—p. 347.
Multiple Giant-Cell Tumors. E. G. Alexander and W. H. Crawford, Philadelphia.—p. 362.
Principles Underlying Surgery of Carcinoma of Rectum. D. B. Pheiffer, Philadelphia.—p. 374.
Aseptic Technic of Stomach Resections. A. de Petz, Györ, Hungary. —p. 388.
Perforated Ulcers of Duodenum: Twenty-Seven Cases. E. C. Brenner, New York.—p. 393.
*Interposition of Small Bowel Segments Between Divided Ends of Colon. H. B. Stone, Baltimore.—p. 401.
Fistulas of Small and Large Intestine. E. Eliot, Jr., New York.—p. 406.
Epigastric Hernia; Relation to Intra-Abdominal Disease. D. F. Sullivan and L. Antupit, Hartford, Conn.—p. 413.
*Collateral Circulation in Blood Vessel Diseases of Lower Extremities. B. M. Bernheim and L. Sachs, Baltimore.—p. 417.
*Ligation of Femoral Artery Below Origin of Profunda Femoris in Obliterative Endarteritis of Leg. T. E. Neill, Washington, D. C.—p. 425.
*Circulatory Factors Influencing Normal Osteogenesis. J. J. Morton and S. J. Stabins, Rochester, N. Y.—p. 430.
Anastomosis of Portal Vein with Inferior Vena Cava. Method of Making Eck Fistula. F. C. Fishback, Rochester, Minn.—p. 436.
*Treatment of Postoperative Suppurative Parotiditis. W. H. Fisher, Toledo, Ohio.—p. 445.

Results of Resection for Gastric Cancer.—Persson has made a study of 361 cases in which a gastric resection was done for carcinoma of the stomach. The operative mortality was 28.0 per cent. In 450 cases of gastro-enterostomy, the operative mortality was 23.1 per cent; in 339 exploratory operations, the operative mortality was 17.1 per cent. More than five years have elapsed since 269 of the patients had resection. Of these, sixty-six died primarily; three were not found. Of 200 surviving patients, 161 died within five years; all except two died of relapse. In addition, twelve patients died of a relapse later than five years after operation. Nine patients died of some other disease later than five years after operation. Eighteen patients are still living, seventeen of whom are well, from seven to twenty years after operation. One patient has on two occasions been subjected to resection, at an interval of three years. From the point of view of the durability of the results, the Billroth II and Polya procedures have shown themselves to be absolutely superior to the Billroth I operation, transverse resection and the Kocher method. Scirrhous tumors have proved to show a greater relapse tendency than the other forms of gastric cancer. None of those patients surviving the operation for scirrhous tumor have remained free from relapses, while, of the other patients, 13.9 per cent have not had a relapse.

Colloidal Lead Treatment of Malignant Tumors.—Stone and Craver have observed regressive changes in the tumors of eight patients out of twenty-one who have received lead injections, either alone or in combination with the applications of the roentgen ray and radium. In two cases, however, the changes were transient, and did not exert any influence on the course of the disease. In one of these—a cancer of the breast—there was a definite regression of the primary tumor, shortly after the injections of lead alone, but the lead had no apparent effect on the metastases or on the course of the disease. The other, also a cancer of the breast, showed regressional changes in the skin metastases where the roentgen ray had been applied previously, but manifested no other changes. In malignant osteogenic sarcoma, lead in conjunction with irradiation offers a valuable method of treating such tumors.

Interposing Ileum Segment in Bowel Resection.—Stone shows that it is possible to interpose a segment of ileum between resected portions of the colon. He prefers a 12 or 15 cm. segment because it contains at least two sets of vessels, thus ensuring a better circulation.

Collateral Circulation of Blood Vessels of Leg.—In obstructive vascular disease of the limb, such as arteriosclerosis or thrombo-angiitis obliterans, Bernheim and Sachs found on examination of the sciatic nerve a definite increase in the number and size of the blood vessels, both in perineural tissue and within the funiculi as well. These observations are constant. This increased vascularization accounts for the survival of certain limbs long after their main blood channels have become totally occluded. Knowledge of this increased sciatic nerve vascularization is of importance in amputating gangrenous limbs. Finally, attention is called to the rather startling fact that whatever the disease process that has affected (and obstructed) the main blood channels may be, the sciatic vessels are not similarly involved other than by a thickening of their walls and by other calcification. Thrombosis of the sciatic vessels has not been noted.

Ligation of Femoral Artery Below Profunda.—Ligation of the femoral artery below the origin of the profunda femoris in the case reported by Neill did not cause any inconvenience, and resulted in great improvement in the condition of the diseased leg in a remarkably short time. Healthy granulations developed in the affected area; the gangrene ceased to extend and was beginning to recede, and the foot was beginning to assume a healthier appearance, but unfortunately, thirty-six days after the operation, the patient died suddenly, as a result, apparently, of pulmonary embolism.

Influence of Circulation on Osteogenesis.—Morton and Stabins assert that when a resection or fracture of a portion of the fibula is made in the white rat or dog, union takes place after a certain period of time. If, in addition to this experiment, the saphenous vein is divided under exactly the same conditions, bony union is delayed beyond the normal repair period.

Treatment of Parotiditis.—Fisher calls attention to the Y incision which he advocated in a previous article, and which meets all the indications of the gangrenous type of parotiditis. This incision extends from the zygoma in a curvilinear manner, following the sternocleidomastoid to the supraclavicular notch. Its posterior limb extends from the mastoid, and joins it below the angle of the jaw.

Archives of Ophthalmology, New Rochelle, N. Y.

56: 423-522 (Sept.) 1927

Trachoma. H. Noguchi, New York.—p. 423.
Mechanics of Squint Operation. H. Rönne, Copenhagen.—p. 428.
Rod-Palpatory Method for Exploration of Orbital Contents and Surface of Eyeball. M. J. Schoenberg, New York.—p. 438.
Roentgen-Ray Therapy in Glaucoma. R. I. Lloyd, New York.—p. 445.
Cultivation of Lens Epithelium "In Vitro." D. B. Kirby, New York.—p. 450.
Cause of Glaucoma of Hypermature Cataract. H. Gifford, Omaha.—p. 457.
Glaucoma Caused by Disturbances in Physicochemical Forces Which Regulate Intra-Ocular Fluid Exchange. J. H. Waite, Boston.—p. 460.
Optical Illusions. G. L. Johnson, Durban, S. Africa.—p. 465.
Causes of Blindness in Missouri and in St. Louis. H. D. Lamb, St. Louis.—p. 469.
Bilateral Prepapillary Vascular Loop of Retinal Artery. A. M. Yudkin, New Haven, Conn.—p. 474.
Vascular Lesions of Fundus Oculi. W. T. Davis, Washington, D. C. —p. 477.

Archives of Otolaryngology, Chicago

6: 201-308 (Sept.) 1927

*Acute Otitis in Infants: Influence on Systemic Conditions. L. W. Dean, Iowa City.—p. 201.
Chronic Temporosphenoidal Abscess: Acute Suppurative Otitis Media. E. R. Roberts, Bridgeport, Conn.—p. 213.
Accessory Sinus Disease. M. C. Myerson, New York.—p. 217.
Explanation for Symptom of Paracusis Willisi. G. E. Shambaugh, Chicago.—p. 228.
*Choanal Atresia and Sinus Infection. W. E. Grove, Milwaukee.—p. 237.
Tuberculosis of Middle Ear. F. R. Spencer, Boulder, Colo.—p. 242.
Paranasal Cavities: Review of Literature of 1925-1926. D. C. Smyth, Boston.—p. 249.

Acute Otitis in Infants as Focal Infection.—The point made by Dean is that infants with malnutrition, who refuse food and who have diarrhea, dehydration, fever or prostration or several of these conditions, may suffer from acute otitis, acute sinusitis, acute tonsillitis or acute retropharyngeal abscess. If any of these conditions are present, the pediatrician should treat the patient accordingly. These infants are very ill, and often it is a problem to decide on the best form of treatment; in spite of every effort, mistakes will be made. The best results can be obtained by complete cooperation between the otolaryngologist and the pediatrician.

Choanal Atresia and Sinus Infection.—Choanal atresia is a condition consisting of a closure of one or both posterior

nares by a complete or incomplete membranous, osseous or membrano-osseous partition. It is usually of congenital origin. Grove is of the opinion that failure to recognize what he regards as a common occurrence in children is the result of faulty examination and careless notation of the observations in each case.

Arch. Path. & Lab. Med., Chicago

4: 329-505 (Sept.) 1927

*Early Inflammatory Reactions in Tissues Following Simple Injury. W. G. Carscadden, Toronto.—p. 329.
Live Fishes Impacted in Pharynx of Man. E. W. Gudger, New York. —p. 346.
*Primary Carcinoma of Lung with Metastases. K. V. Kitzmiller, Cincinnati.—p. 356.
*Ciliated Epithelial Cyst (Ecto-Endodermal) on Floor of Mouth. L. Schultz, Chicago.—p. 359.
Pathologic Anatomy of Syphilis of Pulmonary Artery. S. M. Peck, New York.—p. 365.
Experimental Malignant Ulcers in Skin. M. T. Burrows, St. Louis.—p. 380.
Effect of Blood Preservatives on Urea Determination. R. A. Kilduffe and E. G. Springer, Atlantic City, N. J.—p. 396.
Rapid Histologic Method for Zenker-Fixed Tissue. F. A. Hoag and V. C. Jacobsen, Albany, N. Y.—p. 397.
Acute Yellow Atrophy of Liver. B. Roman, Buffalo.—p. 399.

Reaction of Tissues to Injury.—A reaction definitely inflammatory in character rapidly takes place in tissues following aseptic incisions. The experimental results noted by Carscadden indicate that the probable factors that influence the early inflammatory response are (*a*) cell injury resulting in a disturbance of the electrochemical equilibrium between leukocytes and injured cells; (*b*) the liberation of vasodilator substances such as histamine; (*c*) the vascularity of the part and (*d*) the stimulation of the autonomic nervous system.

Primary Carcinoma of Lung with Metastases.—In the case reported by Kitzmiller there was no suspicion of malignant disease of the lung ante mortem, for the clinical picture was predominantly that of acute nephritis superimposed on an old renal lesion, with secondary cardiac manifestations. Microscopic sections of the lung revealed a tumor of cylindrical and cuboidal cells, growing in alveolar arrangement with occasional papillary projections and a heavy fibrous stroma. Sections of the peribronchial lymph nodes showed widespread tumor masses with papillary projections lined chiefly by cylindric cells. Sections of the heart showed a conspicuous increase in connective tissue in the epicardium with lymphocytic and slight endothelial infiltration, which was dense near the periphery. The muscle beneath the epicardium was invaded by tumor cells arranged in large and small alveoli, in some places with papillary projections, in others with small masses of cells and smaller acini within the alveoli. Within the deeper layers of the muscle, there were small masses of tumor cells lying within the lymphatic spaces. There was no metastases in other parts of the body.

Congenital Epithelial Cyst of Mouth.—Schultz describes a congenital cyst of enterogenic and ecterogenic origin, lined by squamous, columnar and cilated epithelium, and containing glandular structures of the salivary and intestinal glandular types. An interesting feature was the presence of a yellowish brown pigment in the ciliated epithelial lining. The walls proper consisted of a lamina propria and muscularis, which in one region formed a thick layer at a point at which several compartments met. This corresponds to a feature that is always found in the esophageal cysts that have been described.

Arkansas M. Soc. Journal, Little Rock

23: 79-94 (Sept.) 1927

Treatment of Diarrhea in Children. D. Smith, Hope.—p. 79.
Importance of Sinusitis. P. L. Mohoney and D. A. Rhinehart, Little Rock.—p. 83.
Cardiospasm. P. H. Power, Pine Bluff.—p. 86.

Boston Medical and Surgical Journal

197: 373-414 (Sept. 8) 1927

Rickets: Chemical Findings. J. L. Gamble, Brookline, Mass.—p. 373.
Id.: Prevention and Treatment. E. T. Wyman, Boston.—p. 376.
Id.: Plea for Sanity in Use of Modern Methods for Prevention and Treatment. J. L. Morse, Boston.—p. 388.

Canadian M. A. Journal, Montreal

17: 985-1112 (Sept.) 1927

Strategic Front of Medicine Today. R. Philip, Edinburgh.—p. 985.
Cancer of Lung: Twenty-Four Cases. O. Klotz, Toronto.—p. 989.
Acute Yellow Atrophy of Liver. C. P. Howard, Montreal.—p. 996.
Inflammatory Lesions of Thyroid. E. M. Eberts and R. R. Fitzgerald, Montreal.—p. 1005.
Gallbladder Disease. T. McCrae, Philadelphia.—p. 1010.
Gallbladder: Pathology. W. Boyd, Winnipeg.—p. 1015.
Id.: Roentgenologic Examination. E. A. Graham, St. Louis.—p. 1019.
Id.: Surgery. C. G. Heyd, New York.—p. 1023.
Anesthesia in Gallbladder Surgery. W. Bourne, Montreal.—p. 1030.
Effect of Exposure to Sun on Susceptibility of Rachitic Rats to Infection. E. C. Robertson, Toronto.—p. 1033.
Factors in Interpretation of Certain Anomalous Blood Sugar Curves. E. M. Watson, London, Ont.—p. 1036.
Pemphigus in Thirteen Year Old Child. E. A. Morgan, Toronto.—p. 1040.
*Treatment of Whooping Cough. R. R. Struthers, M. Childs and W. R. Kennedy, Montreal.—p. 1042.
Feeding Problems in Private Practice. A. Goldbloom, Montreal.—p. 1048.
Roentgen-Ray Diagnosis of Anencephalus. B. R. Mooney, Edmonton, Alta.—p. 1053.
Typhoid Fever with Pleuritic Effusion. F. McPhedran, Toronto.—p. 1056.
Case of Epstein's Nephrosis. A. H. MacCordick, Montreal.—p. 1057.
Recurring Sarcoma: Case. W. A. Wilkins, Montreal.—p. 1058.
Case of Thrombo-Angiitis Obliterans. A. Bellerose, Montreal.—p. 1061.

Treatment of Whooping Cough.—In the treatment of whooping cough, Struthers et al. conclude that the combination of large doses of a freshly prepared vaccine and exposure to roentgen rays gives the most beneficial results. Prompt cures may be achieved occasionally with any form of treatment, but would appear to be more numerous in those cases treated by roentgen ray after the spasmodic manifestations have become definitely established. The most successful form of treatment of whooping cough is prophylaxis; that is, isolation of the patient, which must be complete, vaccination and isolation of all contacts. A period of four weeks after the onset of the disease is a sufficient length of time for isolation.

Colorado Medicine, Denver

24: 267-294 (Sept.) 1927

Multiple Myeloma. G. B. Kent, Denver.—p. 268.
Roentgenologic Versus Physical Findings in Certain Pulmonary Affections. R. A. Bendove, Denver.—p. 272.
Medical Drainage of Gallbladder. H. J. Sims, Littleton.—p. 278.
Problems of Goiter. M. O. Shivers, Colorado Springs.—p. 286.
Squint. W. W. Yates, Casper, Wyo.—p. 292.

Illinois Medical Journal, Oak Park

52: 177-260 (Sept.) 1927

Developing Relations of Physical Sciences to Dentistry, Medicine and Pharmacy. G. W. Crile, Cleveland.—p. 200.
Diseases of Soft Tissues of Mouth; Primary and Secondary. T. L. Gilmer, Chicago.—p. 203.
Radiotranslucent Foreign Material in Laryngotracheobronchial Tree. E. McGinnis, Chicago.—p. 208.
Nursing Situation National Problem. W. F. Grinstead, Cairo.—p. 210.
Surgery of Colon. C. J. Drueck, Chicago.—p. 212.
Gonorrhea in Female. A. M. Saunders and I. Weaver, Chicago.—p. 217.
Lethargy of Medical Profession Toward Medical Legislation. T. L. Fekete, Jr., East St. Louis.—p. 219.
External Eye Diseases of Interest to General Practitioner. E. R. Crossley, Chicago.—p. 221.
Foreign Bodies in Urinary Bladder. E. W. White and A. J. Holm, Chicago.—p. 223.
Treatment with Tryparsamide and Mercury of 100 Cases of Neurosyphilis. G. W. Schelm, North Chicago.—p. 228.
Sciatic Nerve Paralysis Following Alcohol Injection: Two Cases. W. R. Fischer, Chicago.—p. 235.
Minor Injuries Which Too Frequently Result in Permanent Disability. F. P. Hammond, Chicago.—p. 237.
Pathologic Conditions Found Radiographically Which Are Often Confused with Injuries. J. S. Young, East St. Louis.—p. 239.
Appendicitis Complicating Pregnancy. A. P. Heineck, Chicago.—p. 242.
Senile Cataract: Choice of Operation. O. B. Nugent, Chicago.—p. 250.
Case of Purulent Infection of Chest. C. L. Conroy, Chicago.—p. 254.

J. Experimental Medicine, Baltimore

46: 391-539 (Sept.) 1927

Local Specific Therapy of Experimental Pneumococcal Meningitis: I. F. W. Stewart, New York.—p. 391.
Id.: II. Type I Pneumococcal Meningitis. F. W. Stewart, New York. —p. 409.
*Enlargement of Suprarenal Cortex in Experimental Uremia. E. M. MacKay and L. L. MacKay, San Francisco.—p. 429.
*Systolic Blood Pressure of Normal Rabbit Measured by Slightly Modified Van Leersum Method. R. Dominguez, Cleveland.—p. 443.
Experimental Atherosclerosis and Blood Pressure in Rabbit. R. Dominguez, Cleveland.—p. 463.

*Biology of Streptococcus: VII. Allergic Reactions with Strains from Erysipelas. A. R. Dochez and F. A. Stevens, New York.—p. 487.
*Streptococcus Bacteriophage: I. Powerful Lytic Principle Against Hemolytic Streptococci of Erysipelas Origin. G. Shwartzman, New York.—p. 497.
Rhythmic Range of Leukocytes in Human, Pathologic Leukopenic and Leukocytic States. C. A. Doan and L. G. Zerfas, Boston.—p. 511.

Experimental Uremia.—An experimental uremia was produced by MacKay and MacKay by the removal of both kidneys. It was followed by hypertrophy of the suprarenal glands. The increase in the size of the whole gland was due entirely to hypertrophy of the cortex.

Influence of Liver Diet on Blood Pressure.—Dominguez asserts that Van Leersum's conclusion concerning the influence of a liver diet on the blood pressure of the rabbit is not substantiated by his data, since the fluctuations of blood pressure he obtained do not surpass his own recorded figures for normal animals. Fluctuations of systolic blood pressure beyond the "normal" range are not necessary for the production of experimental atherosclerosis of the aorta in rabbits. Inversely, egg yolk feeding experiments in rabbits in which atherosclerosis of varying degree, even extreme, is obtained, are not accompanied by an elevation of blood pressure outside the "normal" range. The fluctuations of blood pressure observed during experimental atherosclerosis do not simulate the condition of essential hypertension in man.

Allergic Reactions with Erysipelas Streptococci.—Rabbits immunized with filtrates of cultures of hemolytic streptococcus from erysipelas show cutaneous allergy. Two periods of allergy have been observed by Dochez and Stevens, an early and a late phase. The earliest reactions occurring in the first period of allergy can be neutralized with erysipelas immune serums.

Streptococcus Bacteriophage.—The "sludge" phage obtained by the Clarks failed to produce lysis in any of the 102 human pathogenic streptococci tested by Shwartzman. Numerous attempts to induce regeneration of various lytic principles by human streptococci resulted in failure. It was possible, however, to "train" erysipelas streptococci to regenerate a lytic principle active against 76 per cent of strains of this group. The erysipelas phage showed remarkable specificity.

J. Lab. & Clin. Med., St. Louis

12: 1135-1240 (Sept.) 1927

Hypersensitiveness: XXIX. Influence of Heredity in Atopy. A. F. Coca, New York.—p. 1135.
Pollen Antigens, as Determined by Skin Reaction. R. F. E. Stier and G. L. Hollister, Spokane, Wash.—p. 1139.
*Eosinophilia in Asthma, Hay-Fever and Allied Conditions. G. T. Brown, Washington, D. C.—p. 1145.
Influence of Capillary Circulation on Certain Allergic Conditions. E. S. O'Keefe, Boston.—p. 1149.
Factors Which Determine Pollen Content of Air. R. M. Balyeat, Oklahoma City.—p. 1151.
*Oral Administration of Pollen. J. H. Black, Dallas, Texas.—p. 1156.
Allergy: 189 Cases of Asthma and Hay-Fever. L. Unger, Chicago.—p. 1159.
Rôle of Structural Features of Pollen Grains in Identifying Most Important Hay-Fever Plants of California. G. Piness and H. E. McMinn, Los Angeles.—p. 1164.
Treatment of Asthmatic Patients Affected by Protein of Epidermal Group. Z. W. Stewart, Iowa City.—p. 1179.
Asthma: I. 1,074 Cases. F. M. Rackemann, Boston.—p. 1185.
Essential Differences in Chronic Pollen Hay-Fever and Asthma in Children and in Adults. I. S. Kahn, San Antonio, Texas.—p. 1197.
Treatment of Hay-Fever with Ephedrine. F. W. Gaarde and C. K. Maytum, Rochester, Minn.—p. 1203.
Apparatus for Rapid Quantitative Routine Determination of Albumin and Sugar in Urine. J. J. Short, New York.—p. 1205.

Eosinophilia in Asthma and Hay-Fever.—In an effort to determine the significance of eosinophilia in allergy, a painstaking analysis was made by Brown of 370 consecutive differential leukocyte counts on 346 different patients with asthma, hay-fever or some allied condition. There were only four patients in this series with excessive eosinophilia (about 20 per cent); namely, one with perennial hay-fever and three with asthma, and all four of them were nonsensitive.

Oral Administration of Pollen.—Personal experience has convinced Black that it would seem justifiable to conclude that the oral administration of pollen extract offers a satisfactory means of securing protection against pollen, and is free of the objectionable features of hypodermic therapy.

J. Pharmacol. & Exper. Therap., Baltimore

31: 333-405 (Sept.) 1927

Effect of Drugs on Tonus Waves in Excised Terrapin Auricles: VI. C. M. Gruber, St. Louis.—p. 333.
*Soluble Bismuth Sodium Citrate and Intermediate Products. W. F. von Oettingen, Y. Ishikawa and T. Sollmann, Cleveland.—p. 353.
*Colloidal Lead Phosphate in Cancer Therapy. F. Bischoff and N. R. Blatherwick, Santa Barbara, Calif.—p. 361.
Action of Essential Oils and Their Constituents on Methemoglobin in Vitro. E. Dessemontet, Bloomfield, N. J.—p. 377.
Effect of Ethyl Cyanide and Ethyl Isocyanide on Biologic Oxidations. O. H. Emerson and J. W. Buchanan, New Haven, Conn.—p. 387.
*Alpha-Lobeline. W. J. R. Camp, Chicago.—p. 393.

Dibismuthyl Monosodium Citrate.—A method for the preparation of dibismuthyl monosodium citrate is described by von Oettingen et al. This first part of this preparation consists in the synthesis of a monobismuthyl citrate, the formation of which is preceded by an unstable compound, the neutral bismuth citrate, which can be isolated under certain precautions. Under ordinary conditions this precipitate is redissolved in an excess of sodium citrate with the formation of an undefined hypothetic double salt, which undergoes hydrolysis, so that monobismuthyl citrate is precipitated on standing. In the second part, the dibismuthyl monosodium citrate is formed by the solution of the monobismuthyl citrate in sodium hydroxide, under appropriate conditions. As the formation of this product passes through three different phases, the obtaining of a pure product depends, first, on the final p_H of the solution which serves as indicator of the amount of sodium hydrate present, and, secondly, on the amount of alcohol used for the fractional precipitation of the final product.

Colloidal Lead Phosphate.—A method for preparing colloidal trilead phosphate for intravenous therapy is described by Bischoff and Blatherwick. Colloidal lead phosphate injected by vein is relatively nontoxic to rabbits and rats, and does not affect the fragility of red cells in vitro. Ionic lead, buffered with serum containing enough phosphate to react completely with the lead, is also nontoxic. The rabbit excretes lead given as the phosphate at the same rate that it does lead administered in some other form. The relative toxicities to rabbits of lead acetate, colloidal metallic lead and colloidal lead oxide are of the same order, when the drop in the hemoglobin, following injection of a sublethal dose, is taken as a criterion. Metallic colloidal lead reacts similarly to lead acetate when added to blood in vitro, distributing itself between the serum and red cells. Its action on the red cells can be demonstrated by Aub's fragility test.

Pharmacodynamics of Alpha-Lobeline.—Camp shows that alpha-lobeline is not a specific stimulant of the respiratory center. All the other effects it produces may be ascribed to its nicotine-like action on the ganglions of the autonomic nervous system. Caution is urged in its use, especially when the heart is enfeebled, because of its deleterious effect on heart muscle and its marked stimulating action on the vagus. It should not be used intravenously, since it paralyzes respiration if too quickly given and because it is apt to cause cardiac dilatation.

Journal of Urology, Baltimore

18: 225-320 (Sept.) 1927

Papillary Epithelioma of Renal Pelvis. V. C. Hunt, Rochester, Minn.—p. 225.
Tuberculosis in Horseshoe Kidney. J. A. Lazarus, New York.—p. 247.
Kidney Stone: Thirty-Five Cases. W. C. Stirling, Washington, D. C.—p. 259.
Unilateral Fused Kidney: Heminephrectomy for Calculus Pyonephrosis. J. A. Lazarus, New York.—p. 269.
Renal and Ureteral Calculi in Childhood. D. A. Brown, Madison, Wis.—p. 285.
*Prostatic Infection. W. H. von Lackum, Rochester, Minn.—p. 293.
Rupture of Bladder. J. C. Negley, Los Angeles.—p. 307.
Ejaculatory Duct Catheter. B. B. Nicholson, Detroit.—p. 315.

Infection of Prostate.—Von Lackum asserts that approximately 40 per cent of prostatitis is hematogenous, and that dental and tonsillar infection is responsible for many of these cases. Animal experiments show localization which provides additional support for the theory that the prostate acts as a focus for systemic infections.

Kansas Medical Society Journal, Topeka

27: 287-322 (Sept.) 1927

Care of Children in General Practice. F. C. Neff, Kansas City.—p. 287.
Use of Iodized Oil in Visualization of Bronchial Tree. L. G. Allen, Kansas City.—p. 290.
William Beaumont, Father of American Physiology. R. H. Major, Kansas City, Mo.—p. 296.
Biologic Products. J. F. Anderson, New Brunswick, N. J.—p. 299.
Chorio-Epithelioma. A. Boese, Coffeyville.—p. 302.
Treatment of General Paralysis by Coley's Fluid. J. Rotter and J. A. Knoop, Parsons.—p. 304.

Medical Journal & Record, New York

126: 269-332 (Sept. 7) 1927

Malarial Treatment of General Paralysis. H. W. Bayly, London.—p. 269.
Ethylhydrocupreine in Treatment of Lobar Pneumonia. F. B. Cross, New York.—p. 271.
Blood Pressure Above 200 Mm. Symptom of Focal Infection. L. N. Boston, Philadelphia.—p. 274.
Cancer: XXII. Probable Reaction to Acute Injury of Individual Predisposed to Cancer. W. Meyer, New York.—p. 77. (To be Cont'd.)
Proteal Treatment of Drug Addiction. M. G. Carter, T. J. Orbison, E. H. Steele, C. A. Wright and E. H. Williams, Los Angeles.—p. 282.
Atherosclerosis: Relation of Glands of Internal Secretion to Its Development. S. Shapiro, New York.—p. 284.
Multiple Primary Malignancies. R. P. Ball and J. A. Reynolds, Cleveland.—p. 287.
Suggested Terminology for Light Therapy. H. Goodman, New York.—p. 288.
Radium Emanation Treatment of Cervical Cancer: II. J. Muir, New York.—p. 291.
Hypertrophic Cirrhosis of Liver in Infancy and Childhood. E. M. Tarr, Los Angeles.—p. 293.
Indications for Operation in Hernia in Infant and Young Child. A. Martin, Paris.—p. 297.
Diagnosis and Treatment of Cardiac Conditions in Children. J. Epstein, New York.—p. 298.
Convalescent Care of 225 Children with Heart Disease. T. M. McMillan and W. D. Stroud, Philadelphia.—p. 300.
Mechanism of Death in Status Lymphaticus. E. A. Tracy, Boston.—p. 302.
Hypertrophic Pyloric Stenosis. S. A. Blauner, New York.—p. 304.
Cod Liver Oil Concentrate in Rickets and Other Nutritive Disturbances. J. Cohen, New York.—p. 308.
Luigi Cornaro: How He Balanced His Diet. E. E. Cornwall, New York.—p. 309.

Michigan State M. Soc. Journal, Grand Rapids

26: 549-598 (Sept.) 1927

Management of Head Injuries. R. D. McClure and A. S. Crawford, Detroit.—p. 549.
Infections of Hand. J. G. R. Manwaring, Flint.—p. 554.
Physicians with Early Explorers and Adventurers. C. B. Burr, Flint.—p. 556.
Biophysical Principles of Light Therapy. E. A. Pohle, Ann Arbor.—p. 559.
Hyperemesis Gravidarum. R. B. Kennedy, Detroit.—p. 563.
Nonconvulsive Toxemias of Late Pregnancy. W. E. Sisson, Detroit.—p. 567.
Conservative Treatment for Eclampsia. M. A. Darling and D. F. Thomas, Detroit.—p. 570.
Undulant Fever: Case. J. L. Chester and L. J. Bailey, Detroit.—p. 574.

Minnesota Medicine, St. Paul

10: 529-586 (Sept.) 1927

Illinois Lay Education Program. R. R. Ferguson, Chicago.—p. 529.
Nonoperative Treatment of Fractures of Upper Extremity. F. D. Dickson, Kansas City, Mo.—p. 533.
Treatment of Chronic Myocardial Insufficiency. C. L. Greene, St. Paul.—p. 538.
Otitic Sinus Thrombosis. C. D'Arcy Wright, Minneapolis.—p. 551.
Ether-Oil-Morphine-Magnesium Sulphate Analgesia in Labor. J. P. Hiebert, Minneapolis.—p. 556.
Melancholia. G. R. Kamman and E. M. Hammes, St. Paul.—p. 561.
Heart Block of Congenital Origin: Case. M. J. Shapiro, Minneapolis.—p. 566.

Nebraska State Medical Journal, Norfolk

12: 321-360 (Sept.) 1927

Diagnosis of Gallbladder Disease. J. M. Mayhew, Lincoln.—p. 321.
Diseases of Gallbladder: Pathology. E. T. Bell, Minneapolis.—p. 325.
Roentgen-Ray Diagnosis of Gallbladder Disease. R. W. Fouts, Omaha.—p. 327.
Medical Treatment of Gallbladder Disease. C. P. Fordyce, Falls City.—p. 330.
Murphy-Minot Diet in Pernicious Anemia. A. Sachs, Omaha.—p. 333.
Meningitis: Six Cases. B. C. Russum, Omaha.—p. 336.
Mitigation of Old Fogyism. H. Gifford, Omaha.—p. 339.
Neglected Features in Preventive Pediatrics. H. M. Jahr, Omaha.—p. 342.
Pitfalls in Laboratory Diagnosis. J. T. Myers.—p. 346.

New Orleans Medical and Surgical Journal

80: 143-212 (Sept.) 1927

*Protean Manifestations of Disease of Coronary Arteries. F. A. Willius, Rochester, Minn.—p. 143.
Ultraviolet Radiation. E. C. Samuel and E. R. Bowie, New Orleans.—p. 149.
Headaches Due to Refractive, Accommodative and Muscular Anomalies. W. S. Sims, Jackson, Miss.—p. 154.
Problems of Mentally Ill. R. H. Bryant, Pineville, La.—p. 157.
Topical Application of Cocaine in Nose. E. F. Howard, Vicksburg, Miss.—p. 162.
Cautery Versus Sturmdorf Operation in Certain Lesions of Cervix. D. I. Hirsch, Monroe, La.—p. 167.
Minot-Murphy Liver Diet in Pernicious Anemias. S. Harris, Birmingham, Ala.—p. 170.
*Banana as Food for Infants and Children. L. von Meysenbug, New Orleans.—p. 180.
Foreign Bodies in Air and Food Passages. H. L. Kearney, New Orleans.—p. 184.
Mercurochrome. B. J. DeLaureal, New Orleans.—p. 190.

Disease of Coronary Arteries.—Seven hundred unselected clinical cases of coronary sclerosis are reviewed by Willius. The cases are divided into types according to clinical manifestations: (1) angina pectoris, 282 cases; (2) myocardial failures, 368 cases, and (3) paroxysmal dyspnea, fifty cases. There was also a group of cases which presented little or no diagnostic evidence of coronary sclerosis, referred to as the occult type. There were many more males than females, the ratio being approximately 5:1. Eighty per cent of the patients were in the sixth and seventh decades of life.

Value of Banana as Food.—In addition to the easily assimilable carbohydrates of the ripe banana, von Meysenbug says it is a good source of lime and iron, and offers abundant vitamins, excepting the antirachitic factor. As an antiscorbutic, it is second only to orange juice. Its caloric value is high—much higher than that of any of the common fruits—and, pound for pound, its energy value is greater than that of the white potato, and cheaper. Infants as young as 4 months tolerate ripe banana perfectly.

Ohio State Medical Journal, Columbus

23: 711-790 (Sept.) 1927

Renal Function and Renal Disease. A. A. Epstein, New York.—p. 731.
Art in Craftsmanship of Thyroidectomy. H. G. Sloan, Cleveland.—p. 734.
Protein Therapy in Ophthalmology. A. C. Woods, Baltimore.—p. 740.
Artificial Termination of Pregnancy. W. D. Fullerton, Cleveland.—p. 746.
Health Supervision in Toledo Public Schools. P. B. Brockway, Toledo.—p. 751.
Henoch's Purpura: Case. R. W. Bradshaw, Oberlin.—p. 754.

Oklahoma State M. A. Journal, Muskogee

20: 249-272 (Sept.) 1927

Fibroid Uterus. L. H. Ritzhaupt, Guthrie.—p. 249.
Cancer of Cervix. W. H. Livermore, Chickasha.—p. 251.
Epithelioma of Lip and Face. C. P. Bondurant, Oklahoma City.—p. 252.
Endothelioma of Foot. J. R. Anderson, Tulsa.—p. 257.
Carbon Monoxide Poisoning: Two Cases. H. T. Ballantine, Muskogee.—p. 257.
Arthritis. W. H. Bailey, Oklahoma City.—p. 260.
Postoperative Massive Collapse of Lung. D. L. Garrett, Tulsa.—p. 262.

Radiology, St. Paul

9: 179-268 (Sept.) 1927

Treatment of Carcinoma of Rectum by Irradiation. H. H. Bowing, Rochester, Minn.—p. 179.
*Roentgen-Ray Treatment of Bronchial Asthma and Allied Conditions. I. Gerber, Providence, R. I.—p. 192.
Cholecystography. S. Moore, St. Louis.—p. 200.
*New Iodine Compound for Cholecystography. B. R. Kirklin and E. C. Kendall, Rochester, Minn.—p. 205.
Rationale of Gallbladder Diagnosis. F. S. Bissell, Minneapolis.—p. 209.
Oral Cholecystography. T. O. Menees and L. E. Holly, Grand Rapids, Mich.—p. 213.
Anatomy, Physiology and Anomalies of Spine. E. J. Carey, Milwaukee.—p. 219.
Effect of Roentgen Rays on Development of Tuberculosis in Guinea-Pigs. F. A. Ford, Rochester, Minn.—p. 235.
Skin Reactions. A. Bachem, Chicago.—p. 241.

Roentgenotherapy of Bronchial Asthma.—The value of roentgen-ray treatment in true bronchial asthma and various

types of chronic bronchitis is emphasized by Gerber, but further experience has demonstrated that the method has a definite position in therapy. A careful diagnosis of true bronchial asthma is very important. Otherwise, unnecessary treatment may be applied without benefit. Direct treatment of the chest and mediastinal contents has been found generally more efficacious than the indirect treatment applied to other organs, particularly the spleen. Treatment of the latter is best restricted to the refractory cases.

New Iodine Compound for Cholecystography.—Kirklin and Kendall relate their experiences with a 10 per cent aqueous solution of the sodium salt of di-iodo-di-ethyl-ether of di-salicylphthalein in cholecystography. Thirty-five patients have been examined after the oral administration of this compound. In each case, a normal shadow of better density was obtained. None of the patients vomited the new compound, although several had vomited after taking the tetrabromphenolphthalein. Two patients were purged unpleasantly by the drug; one of these had recently had diarrhea and the bowel was still irritable. A few patients experienced a slight laxative effect, but without diarrhea or discomfort. The authors feel sure that this was caused by impurities in this particular lot of the drug rather than by the compound itself, as other lots failed to produce any untoward reaction. No patient had any other general ill effects, and all agreed that they preferred the new compound to the old in view of the unpleasant reactions which they had experienced with it.

Southern Medical Journal, Birmingham, Ala.

20: 669-748 (Sept.) 1927

*Cholecystogastrostomy and Cholecystoduodenostomy. J. S. Horsley, Jr., Richmond, Va.—p. 669.
Cholecystogastrostomy. F. G. DuBose, Selma, Ala.—p. 674.
Postoperative Massive Collapse of Lung. J. T. McKinney and W. B. Porter, Roanoke, Va.—p. 681.
Deformities of Face. E. D. Highsmith, Atlanta, Ga.—p. 688.
Value of Electrocardiograph. T. Frazer, Asheville, N. C.—p. 689.
Trend of Major Communicable Diseases and Diseases of Degeneration in Maryland in Last Quarter of Century. J. Collinson, Baltimore.—p. 695.
Proper Use and Interpretation of Leukocyte Count. M. P. Neal and D. A. Robnett, Columbia, Mo.—p. 700.
Blood Pressure in Obstetrics. G. R. Osborn. Tulsa, Okla.—p. 710.
Mastoiditis in Infants: Forty Cases. J. B. Sidbury, Wilmington, N. C.—p. 713.
Suprapubic Cystotomy and Cystostomy. M. L. Boyd, Atlanta, Ga.—p. 718.
Reese-Holth Operation for Glaucoma. F. P. Calhoun, Atlanta, Ga.—p. 721.
Empyema of Gallbladder, Bronchopneumonia, Empyema, Pulmonary Abscess, in Child Aged 9: Recovery. G. P. Huguley, Atlanta, Ga.—p. 722.
Stereoscopy in Urology. A. E. Goldstein, Baltimore.—p. 723.
Ultraviolet Light in Dermatology. E. R. Hall, Memphis, Tenn.—p. 727.
Therapy of Parapsoriasis. J. C. Michael, Houston, Texas.—p. 730.
*Measles Prophylaxis by Use of Parent's Blood Serum. L. Bivings, Atlanta, Ga.—p. 735.
Infancy and Maternity Work in South. O. Dowling, New Orleans.—p. 738.

Cholecystogastrostomy and Cholecystoduodenostomy.—Experiments were performed by Horsley on nineteen dogs to compare the relative merits of cholecystogastrostomy and cholecystoduodenostomy, and to determine the effects of these operations on the gallbladder, bile ducts and liver. Following operations of both types, definite infection and pathologic conditions of gallbladders, bile ducts and livers were found. Cholecystoduodenostomy was attended by a much higher mortality.

Prophylaxis of Measles.—The results obtained by Bivings from the use of parent's blood serum in a small number of cases has been uniformly satisfactory. He believes that parent's serum offers a prophylactic agent universally obtainable, free from the dangers and disadvantages of horse serum, and easy to prepare and administer. A parent with a history of measles in childhood is always willing to give his blood for the benefit of the child.

Southwestern Medicine, Phoenix, Ariz.

11: 387-430 (Sept.) 1927

Congenital Heart Disease. G. Werley, El Paso, Texas.—p. 387.
Noncalculous Ureteral Obstruction. K. D. Lynch, El Paso, Texas.—p. 390.
Hilum Tuberculosis in Adults. C. Mulky, Albuquerque, N. M.—p. 392.
Breast Feeding. M. K. Wylder, Albuquerque, N. M.—p. 395.
Medical Examination of Food Handlers. O. E. Puckett, Carlsbad, N. M.—p. 397.
Production of Safe Milk. P. S. Fox, Santa Fe, N. M.—p. 397.
Standardization of Record Forms and Files for Full-Time County Health Units. D. B. Williams, Santa Fe, N. M.—p. 399.
Control of German Measles and Chicken-Pox. C. W. Gerber, Las Cruces, N. M.—p. 400.
Nursing Program in Full Time County Unit. E. C. Clement, Carlsbad, N. M.—p. 401.

Surgery, Gynecology and Obstetrics, Chicago

45: 417-576 (Oct.) 1927

*Inflammatory Lesions of Bladder Simulating Neoplasm. J. J. Joelson and W. E. Lower, Cleveland.—p. 417.
Ureteral Stricture: Anatomic and Pathologic Background. M. Schreiber, New York.—p. 423.
*Treatment of Osteomyelitis and Other Infected Wounds. H. W. Orr, Lincoln, Neb.—p. 446.
*Mesenteric Lymphadenitis Simulating Acute Abdominal Condition. L. P. Bell, Woodland, Calif.—p. 465.
*Cholecystogastrostomy for Gastric Ulcer. N. N. Nazarov, Saratov, Russia.—p. 474.
Orthopedic Reconstruction Work on Hand and Forearm: Results. A. Steindler, Iowa City.—p. 476.
Orthopedic Aspect of Low Back Pain in Connection with Pelvic Disorders. P. H. Kreuscher, Chicago.—p. 482.
Low Back Pain. R. R. Best, Omaha.—p. 485.
*Human Ovum Approximately Nineteen Days Old. J. P. Greenhill, Chicago.—p. 493.
Cystography. B. H. Hager and W. F. Braasch, Rochester, Minn.—p. 502.
Partial Gastrectomy for Gastric Ulcer. D. Chamberlain, Leeds, England.—p. 513.
Cholecystectomy. R. P. Rowlands, London.—p. 518.
*Plastic Reconstruction of Axilla in Operation for Cancer of Breast. W. T. Coughlin, St. Louis.—p. 523.
Cleft Palate Repair: Cause of Failure: Prevention. S. Bunnell, San Francisco.—p. 530.
*Ideal Herniorrhaphy. W. W. Babcock, Philadelphia.—p. 534.
*Injection Treatment of Varicose Veins. H. O. McPheeters, Minneapolis.—p. 541.
Foreign Bodies in Bronchus of Intrapulmonary Origin. P. P. Vinson, Rochester, Minn.—p. 548.
Modifications of Harvey Cushing's Silver Clip Outfit. K. G. McKenzie, Toronto.—p. 549.
Treatment of Fractures of Fingers and Metacarpals. H. E. Mock and J. D. Ellis, Chicago.—p. 551.
*Operation for Sterility in Male. H. C. Rolnick, Chicago.—p. 557.

Inflammatory Tumors of Bladder.—Three cases of inflammatory tumors of the bladder are reported by Joelson and Lower; one was a tuberculoma, and the other two were local inflammatory reactions caused by contiguous inflammation. These inflammatory lesions closely simulate a true neoplasm. Differential diagnosis is often difficult.

Treatment of Osteomyelitis and Infected Wounds.—Removal of diseased bone, free drainage and rest secured by means of a plaster cast or suitable splint are the prime essentials of the treatment advocated by Orr. Wounds are not to be dressed at all unless there is a rise in temperature or other signs of acute sepsis.

Mesenteric Lymphadenitis.—Bell reports in detail two acute cases of mesenteric lymphadenitis and chronic cases with acute exacerbations. He treats all cases of mesenteric lymphadenitis as tuberculous until proved otherwise. All patients with suspected mesenteric lymphadenitis, either acute or chronic, should have an exploratory laparotomy because of the various pathologic complications which may exist and the extreme danger of failure to diagnose acute appendicitis. Heliotherapy should be given to those patients who do not respond promptly to sunlight, rest and a high caloric diet. Roentgen-ray therapy is of great value in the acute form and in the chronic form with acute exacerbations in which there is marked glandular enlargement without caseation. Operative removal of glands should not be undertaken except for pathologic examination, unless the glands are caseous or are abscessed. The examination of the mesentery for enlarged glands should be a routine procedure whenever an abdomen is opened.

Cholecystogastrostomy for Gastric Ulcer.—Nazarov believes that cholecystogastrostomy may become the operation of choice in certain cases of gastric ulcer. It should not be undertaken in cases of large, indurated ulcers, as there is a possibility of cancerous degeneration; in fact, it is contraindicated in cases of ulcer in which there is only a little soft infiltration; that is, in the cases in which, up to the present time, the majority of surgeons have considered gastroenterostomy the operation of choice. In these cases, cholecystogastrostomy has many advantages over gastro-

enterostomy. Cholecystogastrostomy in a technically simpler operation.

Study of Young Human Ovum.—A young human ovum obtained by Greenhill in an aborted decidual cast is described, and the measurements are given. The outstanding feature of this ovum is the unusual amount of invasion of the decidua by plasmodium. There is very abundant trophoblast, especially plasmoditrophoblast, in the intervillous space. There are numerous definitive villi, some of which have begun to branch. Blood vessel anlagen are found in the mesoderm of the chorionic vesicle, the villi, the body stalk and the yolk sac. The few preserved sections of the embryo show a small amniotic vesicle and an embryonic shield lying on a large yolk sac. In the decidua capsularis is an operculum deciduae which appears to consist of fetal ectoderm and is attached to the chorion laeve by a strand of plasmodium. The decidual reaction is more pronounced in the stroma cells than in the glands. Some of the large veins in the spongiosa beneath the ovum communicate with the intervillous space and contain free masses of plasmodium. The development of the ovum tallies with ova considered to have a maximum age of 19 days.

Plastic Reconstruction in Mastectomy.—Coughlin reports his results in fifty cases of mastectomy done according to the method first described by him in 1917. Of forty patients operated on more than two years ago, twenty-four are now living and sixteen are dead.

New Herniorrhaphy.—In the method described by Babcock, the aponeurosis of the external oblique is exposed by nearly a transverse incision following the line of skin cleavage and centering over the internal inguinal ring. The fibers of the external oblique are freely separated over the inguinal canal and the edges are reflected. The hernial sac is divided at the neck, and the neck is transfixed and ligated at a high point by a chromic catgut suture, each end of which is armed by a needle. The needles are carried from beneath the transversalis fascia through the edge of the rectus, and the suture pulled taut, transplanting and pulling the neck of the sac behind the rectus muscle. The superior surfaces of the body and ramus of the pubis are cleared by gauze dissection above and posterior to the spine of the pubis. To the ridge of the pecten ossis pubis, the lateral edge of the rectus is sutured. The two needles used to ligate and transplant the neck of the inguinal sac are carried through points on the shelving portion of Poupart's ligament, corresponding with their points of emergence from the rectus muscle. This approximates the edge of the rectus muscle to the shelving portion of Poupart's ligament. From this central point of attachment, one suture is continued laterally and upward, uniting the internal oblique and transversalis to Poupart's ligament. The other suture is continued medially and downward, uniting the inner layer of the anterior sheath of the rectus to Poupart's ligament. The union of the internal oblique and transversalis to Poupart's ligament is reinforced by turning up the flap from Poupart's ligament and the lower edge of the divided external oblique and suturing this to the anterior surface of the inner layer of the sheath of the rectus, by a continuation of one of the sutures. The upper free edge of the aponeurosis of the external oblique is now pulled down over the preceding suture line and united by its edge to the denuded fascia lata, giving a double imbrication. At the lower mesial angle, the suture line may be reinforced and the external ring narrowed by suturing the upper edge of the aponeurosis of the external oblique to the sheath of the pectineus by one or two single mattress sutures. The skin is closed by interrupted or buried sutures, or by Michel clips.

Injection Treatment of Varicose Veins.—McPheeters favors the injection treatment of varicose veins rather than the surgical treatment because there is considerably less danger of embolism and the ultimate results are better. He used a 20 per cent sodium chloride solution.

Operation for Sterility in Male.—The operation described by Rolnick consists in the union of the vas to the rete with the addition of a silkworm gut running through the vas and testis at the point of anastomosis and tied outside on the skin of the scrotum. The purpose of the silkworm gut is to develop a patent channel, to prevent organization of a scar and to make a path for epithelization. It furthermore fixes the testis and vas quite well, preventing their mobility and preventing tension at the point of anastomosis.

U. S. Vet. Bur. M. Bull., Washington, D. C.

3: 861-974 (Sept.) 1927

*Chronic Nontuberculous Lung Infections. K. Dunham and J. H. Skavlem, Cincinnati.—p. 861.
Rôle of Accessory Sinuses in Nontuberculous Pulmonary Infections. J. T. Malone, Whipple Barracks, Ariz.—p. 867.
Recording of Cardiac Findings for Rating Purposes. D. Kaplan, Chicago.—p. 872.
Indications for Urologic Study. C. D. Allen, Memphis, Tenn.—p. 876.
Patient as Individual. J. H. Baird, Chillicothe, Ohio.—p. 882.
Neuropsychiatric Problems Among Negroes. G. S. Moore, Tuskegee, Ala.—p. 887.
*Bactericidal Properties in Vitro of Certain Fatty Oils Irradiated with Quartz Mercury Vapor Spectrum. H. T. Wrenn, New York.—p. 898.
Reading Predilections of Patients in Veterans' Hospitals. L. Sweet, Washington, D. C.—p. 911.
Primary Pleural Mesothelioma. L. H. Criep, Aspinwall, Pa.—p. 919.
Case of Giardia Intestinalis. M. B. Marcellus, Portland, Ore.—p. 925.
Tuberculous Ulcer of Duodenum: Case. R. C. Buckley, Boston.—p. 929.

Chronic Nontuberculous Lung Infections.—Seven hundred cases that presented chest manifestations, or that were diagnosed as presenting a pathologic condition, are reviewed by Dunham and Skavlem. The close association between infection in the upper air passages and the lungs is shown. The nontuberculous lung infections closely simulate pulmonary tuberculosis in symptomatology, physical signs, clinical manifestations and roentgen-ray observations.

Bactericidal Properties of Irradiated Fatty Oils.—Studies were undertaken by Wrenn to determine whether the fatty oils are the source of bactericidal light rays and the conditions necessary for generating the maximum bactericidal effect, and also to present certain experimental data concerning the nature of this bactericidal property. By exposure to the quartz mercury vapor spectrum or the strong rays of direct sunlight, certain fixed oils acquire the property of emitting bactericidal rays. In this respect, cod liver oil gave the most uniform and superior results, although one lot each of cottonseed and olive oils among the small number tested exhibited marked bactericidal properties. Variation in the bactericidal activity of the oils subsequent to irradiation appears to be due to variations in the absorptive power of the oils for ultraviolet rays. The bactericidal property of irradiated oils has been shown to be related to the degree of their blackening effect on photographic films. Studies of the effect of high temperature, alkalization, and a long period of storage on the oils indicate that the factors responsible for bactericidal action are very stable. The bactericidal radiations from the oils cannot penetrate thin quartz screens. They are presumably made up of several different wavelengths in the ultraviolet region of the spectrum.

West Virginia Medical Journal, Charleston

23: 449-504 (Sept.) 1927

Diagnosis and Surgical Pathology of Abdominal Conditions. C. G. Heyd, New York.—p. 449.
Lumps in Breast. S. P. Reimann, Philadelphia.—p. 455.
Open Reduction of Fractures. C. W. Smith, Princeton.—p. 460.
Malignant Growths of Eyeball. H. H. Veon, Parkersburg.—p. 463.
Fever; Production and Regulation. L. J. Bernstein, Wellsburg.—p. 464.
Our Duty to Diabetic Patients. S. L. Cherry, Clarksburg.—p. 468.
Kahn Reaction. C. E. Gabel.—p. 471.
Anaphylactic Phenomena. S. A. Wahl, Cleveland.—p. 471.
Death from Tetanus. M. C. Borman, Montgomery.—p. 472.
Nose Bleed. J. R. Vermillion, Princeton.—p. 473.
Intra-Orbital, Extra-Ocular Glioma. V. T. Churchman, Jr., Charleston.—p. 474.

Wisconsin Medical Journal, Milwaukee

26: 441-500 (Sept.) 1927

Roentgen Ray in Children. W. G. Alexander, Evanston, Ill.—p. 441.
Minor Back Injuries. R. M. Carter, Green Bay.—p. 450.
Abdominal Surgery: Reducing Risk. M. Bornstein and D. V. Elconin, Milwaukee.—p. 455.
Toxic Goiter: Cardiovascular Manifestations. L. F. Jermain, Milwaukee.—p. 459.
Proteins. T. L. Harrington, Milwaukee.—p. 460.
Diagnostic Problems. L. M. Warfield, Milwaukee.—p. 461.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

2: 198-248 (Aug.) 1927

*Bone Changes Occurring in Renal and Celiac Infantilism; Relationship to Rickets: II. Celiac Rickets. L. G. Parsons.—p. 198.
*Action of Acetone. N. Morris and S. Graham.—p. 212.
*Amyloid Nephrosis. G. C. Linder, J. Maxwell and F. H. K. Green.—p. 220.
*Artificial Light Therapy in Infancy: Mercury Vapor Quartz Lamp. H. M. M. Mackay.—p. 231.
Weight Curves. E. M. Newbold.—p. 244.

Ultraviolet Ray in Celiac Rickets.—According to Parsons, celiac rickets can be cured completely, even when the patient is on a fat-free dietary, by ultraviolet ray irradiation and the administration of irradiated cholesterol.

Action of Acetone.—The suggestion is made by Morris and Graham that acetone has a double action: (1) a toxic effect similar to that of methyl alcohol and (2) an acid effect on the acid-base equilibrium.

Amyloid Nephrosis.—The case reported by Linder, Maxwell and Green was diagnosed as one of "nephrotic contracted kidney" and the presence of amyloid, though suggested by the history, was unrecognized. A clinical, histologic and biochemical study was made in this case. The total acid-base equilibrium and the cholesterol in the serum were followed closely, and their clinical values are discussed. The occurrence of tetany and of symptoms of salt deprivation are reported.

Artificial Light Therapy in Infancy.—Observations extending over thirteen months were made by Mackay on the effects of treatment with the mercury vapor quartz lamp on the health of infants. The infants were outpatients, were artificially fed, came for the most part from poor and overcrowded districts, and were subnormal in general health and in weight when they came under observation. The series treated with light numbered sixty-six, the controls 137. All were given cod liver oil during the winter with a view to eliminating rickets and spasmophilia as a complicating factor from the investigation. No objective evidence was obtained that light treatment was of benefit to the health of the infants under consideration.

British Medical Journal, London

2: 333-372 (Aug. 27) 1927

Alcoholic Concentration in Urine as Test of Intoxication. G. Carter.—p. 333.
Diagnosis of Intrathoracic Tubercuolsis. H. M. Davies.—p. 335.
Interrelation of Physician and Surgeon in Regard to Nonpulmonary Tuberculosis. D. A. Powell.—p. 338.
Report of Malaria Commission of League of Nations. S. P. James.—p. 340.
*Asthma and Tuberculosis in Relation to "Climate Allergens." W. S. van Leeuwen.—p. 344.
Epidemiology of Poliomyelitis. F. M. R. Walshe.—p. 347.
Two Cases of Injury to Cervical Vertebrae. J. J. Robb.—p. 349.
Carcinoma: Complication of Piles. P. Hawe.—p. 349.
Long Umbilical Cord Coiled Round Neck. S. Zuckerman.—p. 350.
Pyrexia Without Visceral Signs. C. A. H. Franklin.—p. 350.
Inversion of Uterus. J. C. Fotheringham.—p. 350.

Asthma, Tuberculosis and Climate Allergens.—Van Leeuwen describes the plan followed at Leiden in the treatment of asthma and tuberculosis whereby the evil effect of climate allergens is overcome entirely. Patients sleep in a special chamber built of eternit, a kind of asbestos. Of 500 patients treated in this clinic, about 75 per cent were completely, or almost completely, cured within some days, about 15 per cent improved materially within some weeks, and 10 per cent remained unaltered. In the author's opinion this shows without any doubt that the conception of the influence of climatic allergens on the condition of asthmatic patients in various climates and at various heights is correct. Persons with climate asthma are supersensitive to climate allergens, and consequently they will be subject to attacks in places where these allergens occur, and free from symptoms in places where they are absent. Tuberculous patients suffer from a bacterial infection, and, in addition, are sensitive to climate allergens. This sensitiveness handicaps the patient and forms an additional factor causing the tuberculous process to run a more severe course; it is this additional factor which is absent in the allergen-proof chamber. So the direct influence of this treatment—that is, the degree of improvement—will be mainly dependent on the degree of sensitization to climate allergens shown by the patient, whereas the final result, including the question of permanent cure, depends on the relation between the virulence of the infection and the patient's resistance.

Indian Medical Gazette, Calcutta

62: 419-476 (Aug.) 1927

Tinea Cruris. H. W. Acton and C. McGuire.—p. 419.
*Epidemic Disease of Children Prevalent in Goa Since 1921. A. Paes.—p. 428.
Plasmochin in Treatment of Malaria. B. G. Vad and G. B. Mohile.—p. 430.
*Serum Test for Kala-Azar. R. N. Chopra, J. C. Gupta and N. K. Basu.—p. 434.
Appendicitis Among Indian Women. G. J. Campbell and G. P. Patel.—p. 437.
*Gland Puncture Findings in Leprosy. J. M. Henderson.—p. 438.
Leprosy on Bengal-Bihar Border. E. Muir.—p. 440.
Leprosy Survey at Manbazar Thana, District Manbhum, Bihar and Orissa. I. Santra.—p. 442.
Human Placenta as Enriching Medium for Gonococcus. J. H. Theodore.—p. 444.
Autosterilizing Mechanism of Gastro-Intestinal Tract. L. Arnold.—p. 444.
Sublingual Abscess: Case. M. D. Lathigara.—p. 448.
Complication of Operation for Vesical Calculus. H. C. Gupta.—p. 449.
Treatment of Filarial Fever by Neosalvarsan. C. M. Dalal.—p. 449.
Guinea-Worm Infection. P. M. Bhachech.—p. 450.
Toxic Heart-Block Due to Cerbera Thevetia (Yellow Oleander Seeds). B. M. Roy.—p. 450.
Typhus Fever in Allahabad. R. N. Banerji.—p. 452.

Epidemic Disease of Children in Goa.—Paes describes the clinical history and course of a disease that has affected more than 2,000 children under 6 years of age, in Goa since 1921. There are three types—benign, severe and fulminant. The onset is characterized by vomiting, torpor and somnolence. The pulse is rapid but the temperature is normal except in an occasional case, when it may rise to 100 F. The patient is usually constipated, the pupils are dilated. In fatal cases there is loss of the corneal reflex and there are always tympanites and convulsions. Sometimes the child, who had gone to sleep in perfect health, suddenly gets up in the middle of the night to pass a small mucous stool and soon after enters into the comatose state; at other times, it may get up with intense thirst and on drinking a little water gets to vomiting, which then becomes uncontrollable. Fulminant cases last only a few hours. Rarely there may be profuse sweating, slight contraction of the muscles of the neck and of the rest of the body, even in the intervals between the convulsions. In more than 99 per cent of the cases the neck muscles are completely flaccid, the head falling helplessly into any position. Children with chronic gastro-enteritis get the most severe attacks. In the severe type of the disease the mortality reaches 30 per cent; in the mild type the mortality is less than 5 per cent. The best and most effective treatment is a brisk purge at the commencement of the attack; it produces a complete evacuation of the bowels, and recovery is as complete and rapid as was the onset of the disease. The administration of antimeningococcus serum did not improve results. The child is either dead or has completely recovered within from two to three days. Even in the very severe cases which recover, recovery is as rapid as in the mild cases. It has been suggested that the epidemic may be a mild one associated with a parameningococcus, but the symptoms are those of an overwhelming toxemia. The clinical diagnosis in most cases was either of acute gastro-enteritis or of possible infection with worms.

Serum Test for Kala-Azar.—A simple and rapid diagnostic test for kala-azar has been worked out by Chopra et al. One or two drops of blood from a finger prick are received into 0.25 cc. of a 2 per cent solution of potassium oxalate and the test is performed in the same way as with the serum. The results obtained with this test run parallel with those obtained with the serum test.

Gland Puncture Observations in Leprosy.—Henderson asserts that in a small proportion of early cases lepra bacilli

can be recovered from the lymph glands at a time when careful bacteriologic examination of the skin is negative. In the late stage there is a diminution in the incidence of lepra bacilli in the glands, coincident with the fall in the number of organisms throughout the body generally. Unless a gland is relatively heavily infected, gland puncture may fail to show bacilli: it is not therefore recommended as an accurate diagnostic procedure in early cases. The percentage of positive results appears to be somewhat larger in untreated than in treated cases.

Journal of Hygiene, London

26: 235-361 (Aug.) 1927

Bacterial Virulence and Immunity. A. Eastwood.—p. 235.
*Milk-Borne Sonné Dysentery. G. M. Fyfe.—p. 271.
Value of Nonspecific Agglutination in Differentiation of Genus Brucella. G. R. Ross.—p. 279.
Slow Lactose Fermenting B. Coli in Urinary and Intestinal Infections. L. S. Dudgeon and R. J. V. Pulvertaft.—p. 285.
Status Thymicolymphaticus. M. Greenwood and H. M. Woods.—p. 305.
*Diphtheria and Scarlet Fever Immunization. J. P. Kinloch, J. Smith and J. S. Taylor.—p. 327.
Value of Methods for Differentiation of Bacilli of Coli-Aerogenes Group, When Applied in Shanghai. E. P. Hicks.—p. 357.

Milk-Borne Sonné Dysentery.—For the first time there is recorded by Fyfe an outbreak of milk-borne bacillary dysentery which has been proved to be due to *B. dysenteriae* Sonné. In this milk-borne outbreak of Sonné dysentery there were over 150 cases and no deaths, the absence of mortality being in marked contrast to the high mortality rate which accompanies milk-borne outbreaks of Flexner dysentery. Several milk-borne outbreaks of enteritis simulating dysenteric infections have been recorded in which the evidence has pointed to a living bacillus of unrecognized type as the causal agent. It is obvious that in future *B. dysenteriae* Sonné will require to be excluded from the group of the unrecognized viruses.

Diphtheria and Scarlet Fever Immunization.—From the evidence submitted by Kinloch, Smith and Taylor, it appears reasonable to conclude that the comprehensive control of the incidence of scarlet fever and diphtheria in the community will be obtained when the newer methods of immunizing against these diseases have been generally adopted.

Practitioner, London

119: 69-136 (Aug.) 1927

Chronic Rheumatic Conditions. W. Willcox.—p. 69.
Mastoid Disease. W. J. Harrison.—p. 82.
Vertigo. F. H. Diggle.—p. 92.
Aural Vertigo: Successfully Treated by Zünd-Burguet Method. M. Yearsley.—p. 101.
Chronic Hypoglycemia. P. J. Cammidge.—p. 102.
Mind: Chief Therapeutic Power. J. K. Reid.—p. 113.
Lacrimal Obstruction. W. D. Lawrie.—p. 119.
*Treatment of Arthritis by Injections of Sea-Water. T. E. Lawson.—p. 122.

Sea Water Injections in Arthritis.—Lawson asserts that the sea-water treatment has stopped the progress of arthritis in many cases when everything else has failed. The dose varies from 10 to 500 cc. The injection is usually given intramuscularly twice a week; occasionally three times a week may be indicated. One dose should be given, the reaction noticed, and an improvement looked for. When it is clear that no further improvement will take place, another dose is indicated. An improvement in the general health during the treatment can be promised with certainty. Overdosage causes loss of appetite and depression. In a series of twenty-seven cases, three have failed to show any improvement. All showed much destruction of the joints. Six improved moderately. Eleven cases were greatly improved, but twinges of pain remained, and some limitation of movement in some of the joints. Seven cases appeared to be cured.

Quarterly Journal of Medicine, London

20: 353-510 (July) 1927

*Intracranial Hemorrhage in Infancy and Childhood. W. P. H. Sheldon.—p. 353.
*Sedimentation Rate of Erythrocytes in Certain Tropical Diseases. H. B. Newham.—p. 371.
*Muscular Effort: Relation to Cardiac Failure. A. E. Clark-Kennedy and T. Owen.—p. 383.
*Serum Calcium in Pulmonary Tuberculosis: Treatment by Intravenous Injection of Calcium. W. Brockbank.—p. 431.
Multiple Nodular Hyperplasia of Liver. L. E. Hurley and G. R. Cameron.—p. 449.
*Diagnostic Value of Dextrose-Tolerance Curves. R. Hale-White and W. W. Payne.—p. 457.
*Blood Coagulation and Hemophilia: I. Blood Coagulation in Hemorrhagic Diseases. R. V. Christie.—p. 471.
*Id.: II. Hemic Functions in Hemophilia. R. V. Christie, H. W. Davies and C. P. Stewart.—p. 481.
*Id.: III. Treatment of Hemophilia. R. V. Christie and G. L. Gulland.—p. 499.

Intracranial Hemorrhage in Infancy and Childhood.—An analysis made by Sheldon of 10,150 consecutive postmortem examinations showed exactly fifty cases of intracranial hemorrhage in children under 12 years of age, giving a percentage of just under 0.5. Of the fifty cases, twenty-eight were extracerebral, twenty-two intracerebral. The distribution was: subdural, eleven cases; subarachnoid, sixteen cases; cerebral, sixteen cases; cerebellar, four cases; pontile and medullary, two cases, and epidural, one case. None were prenatal cases. In the majority of these cases, the intracranial hemorrhage was not diagnosed before death. One symptom that seems fairly common is the occurrence of convulsions. In this series a positive statement of convulsions was made in 59 per cent. The convulsions were seldom of localizing value, but the paralysis which followed in some cases corresponded more closely to the area of hemorrhage. The postmortem evidence shows that, although in some cases, notably those with malignant endocarditis, the situation and extent of the hemorrhage was sufficient per se to have resulted in death, in others the patient died because of the severity of the primary disease, and but for that could have recovered from the lesion produced by hemorrhage.

Sedimentation Rate of Erythrocytes in Tropical Diseases.—Newham's study disclosed the fact that the rate of sedimentation of red blood corpuscles varies markedly in a great variety of disease conditions; however, little value can be placed on the test as an aid in differential diagnosis. It would appear that in all cases showing increased rapidity of sedimentation there is some concomitant derangement of the liver. Rapid sedimentation is not dependent in any way on the particular blood group to which the blood belongs, although it appears to occur in any disease condition associated with anemia. The cause of the phenomenon does not appear to reside in an increased proportion of fibrinogen in the blood, but in some property of the corpuscles rather than in any particular property of the plasma. The author believes that it is probable that the phenomenon of rapid sedimentation of erythrocytes is due to a combination of both physical and chemical changes.

Muscular Effort and Heart Disease.—Clark-Kennedy and Owen assert that, from the physiologic standpoint, heart disease is to be looked on from the point of view of progressive disintegration of function. As the functional efficiency of the heart is reduced by disease, integration of cardiorespiratory function is for a time maintained by a corresponding reduction in the functional capacity of the mechanical apparatus for breathing. When the limits of this protective reaction are reached, disintegration of cardiorespiratory function begins; circulation now fails before ventilation, oxygen intake before carbon dioxide elimination, and cardiac output before venous return. Then alone do the symptoms of congestive cardiac failure supervene.

Serum Calcium in Pulmonary Tuberculosis.—Seventy cases of pulmonary tuberculosis were examined by Brockbank and the serum calcium value was found to vary between 8.6 and 12 mg. per hundred cubic centimeters, the normal value being 10 mg. per hundred cubic centimeters of serum. When the cases were graded according to their severity it was observed that, on the average, the calcium was decreased in quantity in the serum when the disease was acute, and that it was increased when the disease had healed, with proportionate results in the intermediate stages. The difference amounted to 20 per cent. The serum calcium was not diminished in patients who are coughing up blood, as compared with patients in a similar stage of the disease but without that symptom.

It was found that calcium, if given by mouth, failed to alter the serum calcium materially, but when given intravenously the serum calcium was raised above the normal for forty-eight hours. Six patients received calcium intravenously with encouraging results.

Diagnostic Value of Dextrose-Tolerance Curves.—The only type of curve on which Hale-White and Payne would base a definite diagnosis of diabetes is one that is abnormal throughout. If a patient has a curve of this type, he has diabetes. In no other instance should the type of curve be allowed to outweigh definite clinical evidence. In some cases in which the clinical evidence leads to doubt as to the diagnosis, the sugar-tolerance test may be of value, but only where the differential diagnosis lies between a condition in which the curve is commonly abnormal and one in which it is usually normal. Thus it is of help in deciding whether an obese patient is suffering from a pituitary tumor, diabetes, or merely simple adiposity. Another example is in the differential diagnosis between hysteria and myasthenia gravis. For the most part, though the observations in various diseases are of considerable scientific interest, the authors regard the sugar-tolerance test as being of little value in differential diagnosis at the bedside.

Blood Coagulation and Hemophilia.—By taking the coagulation time of successive drops of blood from a single stab wound, not only the coagulation time of the blood but also an index of the tissue reaction and platelet reaction is obtained, and thus a true index of the hemorrhagic tendency. Christie's work shows that in hemophilia the curve is characteristic, indicating a deficiency in the coagulative elements of the blood, and also a deficiency of the platelet reaction. Severe purpura and jaundice also have a characteristic curve, indicating a deficiency of the platelet reaction. Three cases are described in which, although there was a definite hemorrhagic history, the coagulation time was normal. The coagulation curve in these cases was definitely pathologic.

Hemic Functions in Hemophilia.—From a study of the effects of lysis and switching on the coagulation of normal blood, Christie, Davies and Stewart advance the suggestion that thromboplastic substance does not exist as such in unshed blood. From an extension of this study to hemophilic blood and to hemophilic plasma containing platelets they have reached the conclusion that in part the coagulative defect in hemophilic bloods consists in a slow liberation of prothrombin from the platelets. In hemophilic blood the serum calcium, the plasma nonprotein nitrogen, total nitrogen and chlorides, and the blood cholesterol and inorganic phosphorus are present in normal amounts. In hemophilia there is a further coagulative defect; namely, the slow conversion of prothrombin into thrombin. The thrombin, when formed, is normal in amount. It is suggested that the slow liberation of prothrombin and the deficient chlorine interchange may be due to a common cause.

Treatment of Hemophilia.—A study was made by Christie and Gulland of the therapy of hemophilia. The only means by which the coagulability of hemophilic blood can be increased to any appreciable extent, and the symptoms definitely controlled, is by blood transfusion, whether of whole blood, citrated blood, or defibrinated blood. Of these the authors believe the citration method to be the best. This improvement lasts from five to seven days; it is the degree and not the duration of improvement which depends on the amount of blood given. They failed to find a negative phase, as suggested by Addis. A slight but transient improvement was obtained after intravenous injections of fresh human serum. Subsequent injections produced no cumulative action. Hemostatic serum, sheep serum (not fresh), horse serum (not fresh), fibrinogen, peptone, calcium, thymus extract and protein shock have been tried with negative results. Intravenous sodium citrate was given an extensive trial, and appears to be of some slight therapeutic value. Locally the most effective coagulant proved to be fresh human blood soaked in cotton-wool and applied after removal of all useless clots. Antiplatelet serum, intravenous calcium chloride, and thymus nucleic acid are suggested as being worthy of a trial in the treatment of hemophilia.

Gazette des Hôpitaux, Paris

100: 1085-1100 (Aug. 17) 1927

*Influence of Menstruation on Artificial Pneumothorax. J. Caussimon.—p. 1089.

Influence of Menstruation on Artificial Pneumothorax.—Pleurisy in the course of artificial pneumothorax seems to be about three times more frequent in women than in men. Many pleural effusions make their appearance coincident with or immediately after menstrual fever attacks. At the time of menstruation the more or less tuberculized pleura acts exactly as does the tuberculous lung. In the course of therapeutic pneumothorax, the lung being perfectly collapsed, an active pleural lesion causes attacks of menstrual or post-menstrual fever. A stabilized pleural lesion gives a normal menstrual thermal reaction. This is one reason, among others, for not producing a pneumothorax or practicing reinsufflation immediately before or during the menstrual period.

Paris Médical

63: 125-136 (Aug. 13) 1927

*Treatment of Tuberculous Pyothorax. G. Caussade and A. Tardieu.—p. 125.
Unrecognized Diphtheritic Paralysis. L. Izard.—p. 131.

Treatment of Tuberculous Pyothorax.—Four cases of spontaneous or secondary tuberculous pyothorax were treated with intrapleural injections of a mixture of iodoform (1 Gm.), sulphuric ether (10 cc.) and a 25 per cent solution of ethyl morrhuate in olive oil, enough to make 100 cc. Results were excellent.

Presse Médicale, Paris

35: 993-1108 (Aug. 13) 1927

*Treatment of Paget's Disease of Nipple. L. M. Pautrier et al.—p. 993.
Procedures in Lumbar Puncture. J. Mouzon.—p. 997.
Emotional Blushing. P. Hartenberg.—p. 1003.

Paget's Disease of Nipple.—In studying numerous sections, transitional forms between dyskeratosic malpighian cells and Paget's cells were not observed; the two forms were seen always side by side. Since, when the mammary cancer has formed, the histologic lesions are identical with those found in what is known as the dyskeratosic, precancerous stage, it seems reasonable to suppose that the cell has been cancerous from the beginning. Through histologic examination in one case of Paget's disease, the authors were able to demonstrate a deep cancer, not susceptible of clinical diagnosis, and undeniably of glandular origin. Paget's disease of the nipple should be treated by early and total ablation of the breast.

35: 1025-1040 (Aug. 20) 1927

*Pathogenesis and Pathologic Physiology of Herpes Zoster. G. Marinesco and S. Draganesco.—p. 1025.
Toxic Encephalitis of Disseminated Sclerosis Type Beginning with Mental Disturbances. R. Targowla.—p. 1028.
Diagnosis of Cerebral and Medullary Compressions. A. Plichet.—p. 1031.

Pathogenesis and Pathologic Physiology of Herpes Zoster.—The first case described by Marinesco and Draganesco was an eruption of herpes zoster involving the interior and posterior surfaces of the thigh on the side where there had been thalamic syndrome disturbances. The coexistence of herpes zoster and simple herpes in this patient proves that the viruses differ as to their nature. The localization of the eruption tends to prove that means of defense against the virus were here diminished and its penetration was thus facilitated. The authors examined, besides a large number of cases of inflammatory lesions of the spinal ganglions without zoster (typhus, tabes, etc.), five cases of cancerous infiltration of the ganglions in subjects who, during life, did not present zoster. They conclude that symptomatic zoster is only unrecognized idiopathic zoster. The eruption is usually accompanied by lymphocytosis of the spinal fluid. The anatomicoclinical facts tend to prove that the eruption of herpes zoster is a cutaneous lesion due to a special virus which acts through the sensory and vasomotor nerves to give rise to the exanthem and to the characteristic vesicles. The inflammatory process spreads to all the elements of the skin

and involves the vessels, glands and nerve bundles. The zosteriform eruption is not a trophic disturbance. It is always propagated throughout the length of preformed routes existing in the nerves.

Progrès Médical, Paris

53: 1249-1280 (Aug. 13) 1927

*Thyroid Extract Treatment of Habitual Abortion. H. Vignes.—p. 1255.
Positive and Negative Certainty in Gastric Radiology. M. Delort and R. Coliez.—p. 1256.
Acute Intestinal Occlusion After Gilliam's Operation. E. Petersen.—p. 1271.

Thyroid Extract Treatment of Habitual Abortion.—The patient had had three abortions. There was no response to antisyphilitic treatment. Thyroid treatment was given previous to and in the course of the fourth pregnancy, and a normal child was born at the end of nine months. Vignes is convinced that a slight thyroid insufficiency was responsible for the three abortions.

Annali d'Igiene, Rome

37: 429-496 (July) 1927

*A Thermophilic Streptothrix. G. Ascione.—p. 429.
*Preservation of Bacteria. G. Pergher.—p. 438.
Preservation of Reagent. P. Rinaldi and N. Sette.—p. 446.
Tubercle Bacillus. R. Ciauri.—p. 462.

Pathogenic Thermophilic Streptothrix.—From the Agnano hot springs De Blase isolated a thermophilic streptothrix. Ascioni states that the germ begins growing profusely at 45 C. and yields luxuriant growths in broth and agar after thirty or forty hours in the incubator at 55 C., and even more so at 60 C. It is the only organism recovered from the water at 55 C. When inoculated in the guinea-pig, this streptothrix caused death in from five to fifteen days, or more, with serious toxic symptoms. This action appears to be due to a hemolytic poison.

Preservation of Nonsporogenic Organisms in Blood.—From his experiments, Pergher concludes that blood is the best medium for the purpose of keeping alive for a long time most of the usual nonsporogenic organisms. These studies showed that the various dysenteric bacilli, streptococci, Friedländer's pneumobacilli, the plague and diphtheria bacilli and some strains of salmonellas could be kept alive in rabbit's blood for at least five years.

Archivi di Biologia, Genoa

4: 1-72 (May-June) 1927

Reticular Tissue in Lymphogranuloma. O. Magaton.—p. 3.
*Rabies. G. Avezzù.—p. 27.
*Diagnosis of Skin Tumors. E. Balbi.—p. 41.
Vaccine Treatment of Chancroid. G. Maggiulli.—p. 57.

Enzyme Test in Rabies.—Avezzù reports further studies bearing out the value of the Sivori-Rebaudi enzyme test as a quick and sensitive method to determine the degree and duration of the immunity conferred by the vaccine treatment of rabies. The antirabic power of a patient under treatment or already cured is often very high, and his serum may even neutralize in vitro twenty times its volume of a 1 per cent fixed virus emulsion. Its highest potency seems to be reached about thirty-five days after completion of the treatment. Human serum with positive enzyme reaction protected three rabbits inoculated intraperitoneally with rabic virus, but only one of three inoculated subdurally. Earlier than eighteen days after the beginning of treatment or later than one year after its completion, the serum of vaccinated persons acts just the same as that of nonvaccinated persons.

Enzyme Test in Diagnosis of Cancer.—Balbi studied twenty-five cases of epithelioma of the skin and nine of precancerous disease (senile keratoma and seborrheic warts). He tried Ascoli-Izar's stalagmomeiostagmin reaction, Izar's precipitation meiostagmin reaction, Kahn's flocculation test and Sivori-Rebaudi's enzyme test. Ascoli-Izar's and Kahn's tests gave positive results only twice and Izar's only once, while the enzyme test yielded positive results in twenty out of twenty-four cases of epithelioma. It was invariably negative in nine cases of warts. The reaction was also positive in six of seven cases with a clinical diagnosis of internal tumor and cachexia. The test has a disadvantage: the antigen alkalization as done at present with litmus paper is very uncertain.

Clinica Chirurgica, Milan

30: 825-920 (Aug.) 1927

Ovarian Graft. F. Rossi.—p. 825.
Peritonitis from Perforated Peptic Ulcer. G. Negroni.—p. 845.
*Malarial Enlargement of Spleen. I. Scalone.—p. 848.
Treatment of Rectal Prolapse. C. F. Bianchetti.—p. 872.

Spleen in Pathogenesis of Gastric Ulcer.—Serious gastric syndromes in malaria, states Scalone, are more common in those countries where the disease is severe and resistant to treatment. He quotes at length six cases to show that a floating enlarged spleen may bring about disturbances in the stomach closely resembling ulcer. The changes may be merely functional or they may be organic. They also vary from simple superficial erosion to perforating ulcer. Splenectomy cures the gastric symptoms definitely. They are, therefore, an indication for removal of the spleen in enlargement of that organ in malaria.

Clinica Medica Italiana, Milan

58: 295-387 (July-Aug.) 1927

The Pancreas in Anemia. L. Villa.—p. 295.
Lymphadenosis with Atypical Blood Picture. G. Callerio.—p. 308.
Case of Leukemia. P. Dotti.—p. 319.
*Pulmonary Atherosclerosis. A. Costa.—p. 325.

Prevalence and Pathogenesis of Pulmonary Atherosclerosis.—Among 210 pulmonary arteries of patients aged from 20 to 95, Costa found in 65 per cent hyperplastic or degenerative hyperplastic lesions, evidently a sign of atherosclerosis. Only 8 per cent of the total and 12 per cent of the involved specimens exhibited gross lesions. There is a type of pulmonary atherosclerosis strictly associated with senile changes and not with chronic cardiopulmonary disease. From the age of 60 years on, that condition is constant in men and almost so in women. In men it may even develop earlier (about the thirtieth year). The histologic change is usually thickening of the intima. The pulmonary artery has absolutely no connection with the aorta, as regards atherosclerosis. Among 100 cases with serious aortic lesions, the pulmonary artery was found untouched in forty-five; while in fifty-four of 100 other cases the process was reversed.

Archivos Esp. de Enf. del Aparato Digestivo, Madrid

10: 449-512 (Aug.) 1927

*Sign in Abdominal Perforation. V. Juaristi.—p. 449.
Subcutaneous Tear of Abdominal Wall. V. Juaristi.—p. 451.
Surgical Problems of Digestive Tract. F. Gallart Monés.—p. 453.
Therapy of Digestive Tract. J. M. Rosell.—p. 465. C'td.
Duodenal Stasis in Ulcer. D. del Valle and R. Donovan.—p. 481.

Sign of Abdominal Perforation.—In any intra-abdominal perforation, the presence of free gas may readily be detected by examining the navel by finger tip pressure. This sign was found positive in cases of perforated gastric ulcer, intestinal tears caused by the kick of a mule, perforated appendicitis, etc. In some cases the navel may project somewhat, but in all cases, when passing the finger gently backward and forward over the region, a slight gurgling sound is perceived.

Arch. Lat.-Amer. de Pediatría, Buenos Aires

21: 393-464 (June) 1927

*Chorea. M. Acuña and A. Puglisi.—p. 393.
Aortic Signs of Infantile Syphilis. Martagão Gesteira.—p. 409.
Pyuria in New-Born. N. Leone Bloise.—p. 434.
Pneumococcic Meningitis. J. A. Bauzá.—p. 441.
Heat Meningitis with Blindness. E. Portú Pereyra.—p. 450.
Postencephalitic Parkinsonism. J. M. Estapé.—p. 454.

Study of Chorea.—Of the 146 cases of chorea studied by Acuña and Puglisi, seventy-seven were in boys and seventy-nine in girls. The age extremes were 4 and 14 years, but most patients belonged to the 9 to 14 year group. The disease was associated with acute polyarthritis in thirty-eight cases, with rheumatism and endocarditis in twelve; with endocarditis without rheumatism in nine; with congenital syphilis in forty-seven. Recurrences were noted in 16 per cent. The con-

dition seldom became chronic, usually subsiding within two or three months. Chorea was not directly responsible for any mortality, the three deaths being caused by cardiac complications. Treatment usually consisted of rest in bed with isolation and arsenic by mouth, with salicylate in the rheumatic cases, antisyphilitic drugs in cases of congenital syphilis. The association with rheumatism (26 per cent) was far lower than the figures given by some authorities.

Boletin del Hosp. Civil de San Juan de Dios, Quito

2: 1-183 (Feb.-April) 1927. Partial Index

Hymenolepis Nana in Ecuador. L. G. Dávila.—p. 9.
Cerebral Lesions of Syphilis. A. Estupiñan M.—p. 30.
Chloruremia. E. Batallas B.—p. 35.
Medicine in Ecuador. G. Arcos.—p. 47.
Pulmonary Syphilis. E. Cevallos.—p. 72.
Scleral Inflammations. A. de la Torre.—p. 77.
Tetany in Child. L. E. Arregui.—p. 88.
*Pinto in Ecuador. S. Lasso Meneses.—p. 97.

Pinto in Ecuador.—Pinto or caraate is seen in Ecuador only among the Indians in the Chillos valley in the Andes, where it appears as the "blue disease." In Colombia there is a predominance of the white and pink varieties, which attack white and black persons as well as Indians. The causative fungus also exhibits three variants: white, greenish blue and pink, representing, perhaps, different stages of the same parasite. The disease invariably tends to become chronic. The prognosis is favorable while the condition remains localized, but guarded when it spreads. Diagnosis is based on the appearance of the skin, presence of eosinophilia, weakness of certain flexor muscles, and on the result of sections and cultures. Treatment is empiric: baths, tartar emetic, copper sulphate, sulphur, mercurial ointment, chrysarobin and salicylic acid. The disease has received various names in different parts of tropical America.

Lisboa Médica, Lisbon

4: 105-160 (March) 1927

Bone Regeneration. C. Cabeça.—p. 105.
*Gastric Ulcer. M. Moreira.—p. 131.

Lymphocytosis in Gastric Ulcer.—The constant lymphocytosis found in gastric ulcer cases led Moreira to investigate its diagnostic value. Out of forty-seven cases in various stages, 60 per cent exhibited a lymphocytosis of more than 25 per cent; 37.7 per cent, normal values (18-25 per cent), and 2.2 per cent, lymphopenia. The last patient had a severe postoperative anemia. Among twenty cases of gastric tumor, thirteen had a lymphocyte count under 18 per cent, two between 18 and 25 per cent and only five over 25 per cent. On the other hand, there was absolute leukocytosis in 60 per cent of the cases of tumor as contrasted with 34 per cent in ulcer cases. A relative lymphocytosis is, therefore, a valuable sign in favor of ulcer as against new growth. An absolute leukocytosis points the other way. In other gastric diseases both leukocytosis and lymphocytosis are variable, infrequent and moderate. The lymphocytosis seems to continue during malignant degeneration of ulcer and, perhaps, in plastic linitis.

Medicina Ibera, Madrid

2: 145-164 (Aug. 20) 1927

*Addison's Disease. E. Bonilla and A. Moya.—p. 145.
Gallstones: Sudden Death. I. Puente.—p. 156.

Blood Sedimentation Speed in Addison's Disease.—In twenty-four cases of Addison's disease, Bonilla and Moya found the sedimentation time of erythrocytes decreased. This finding is the most reliable laboratory observation for the diagnosis of suprarenal impairment. The changes in the blood sugar did not influence the blood cell sedimentation time.

Pediatría Española, Madrid

16: 161-192 (June) 1927

Infantile Atrophy. D. J. Sarabia y Pardo.—p. 161.
Buccal Atresia. A. Vázquez Rodríquez.—p. 172.
*Spanish Pediatrics in the Seventeenth Century. J. Velasco Pajares.—p. 176.

A Spanish Pioneer of Modern Pediatrics.—In 1690 Gerónimo Soriano published a book entitled "Method and Art of Curing Diseases of Children." Its contents depict him as an acute observer and true pediatrician. The fact of his devoting a whole book to the subject demonstrates his recognition of the importance of this branch of medicine. While some of the remedies he prescribed are empiric, a number of the chapters bear witness to his clinical acumen.

Prensa Médica Argentina, Buenos Aires

14: 281-316 (Aug. 10) 1927

Hydatid Cyst Pressing on Cord. M. R. Castex et al.—p. 281.
Malunion in Humeral Fracture. N. Tagliavacche and L. A. Weber.—p. 293.
*Diagnosis of Leukemia. M. Schteintgart.—p. 296.
Classification of Leukemias. P. M. Barlaro.—p. 297.

Macroscopic Diagnosis of Leukemia.—This method is recommended by Schteintgart for the diagnosis of leukemia when a complete blood examination is impossible. Ten cubic centimeters of blood is taken from the patient and shaken for five minutes with potassium oxalate crystals or sodium citrate solution to avoid clotting. The blood is then allowed to stand for twenty-four hours. If the patient has leukemia, it will then be found divided into three typical layers: at bottom a layer of erythrocytes, next a grayish white layer of leukocytes, and on top the serum. The appearance is unmistakable. While in severe leukocytosis, the appearance is somewhat similar, the gray layer is never so thick and its appearance is different.

Revista de Especialidades, Buenos Aires

2: 165-331 (July) 1927. Partial Index

Stupor in Parkinsonism. J. M. Obarrio.—p. 165.
Echinococcic Epilepsy. M. Alurralde et al.—p. 197.
Parkinsonian Melancholy. R. Orlando.—p. 215.
*Sympathectomy in Ozena. E. Casterán.—p. 289.
Loss of Spinal Fluid Through the Ear. R. Bompet.—p. 297.

Failure of Periarterial Sympathectomy in Ozena.—Leriche's operation, suggested for the cure of ozena, Casterán states, is incomplete and therefore irrational. Some strands of the pericarotid sympathetic group are always left behind. The regeneration of the periarterial sympathetic nerve has been verified within a month after removal. The nasal sympathetic route is not unique and Leriche's operation does not touch the others. Three patients with ozena improved at first after this operation, but they reverted to their original condition after a month had elapsed.

Revista Médica de Barcelona

8: 1-140 (July) 1927. Partial Index

*Epilepsy. J. Sanchis y Banús.—p. 2.
Rehabilitation Surgery. M. Bastos Ansart.—p. 18.
Nerve Centers. P. Del Río-Hortega.—p. 36.
Hematoma of Corpus Luteum. J. Torre Blanco.—p. 71.
Blood Uric Acid in Renal Sclerosis. R. Fraile.—p. 74.
Renal Threshhold in Diabetes. E. Carrasco Cadenas.—p. 79.
Megalocytic Subependymal Glycosis. P. Del Río-Hortega.—p. 85.
*Giardia Infestation. J. M. Madinaveitia.—p. 98.
Trichinosis. J. Sanchis Banús et al.—p. 103.

Genotypic Element in Epilepsy.—In more than 83 per cent of 292 patients with epilepsy, the family history disclosed suggestive data, such as seizures, headaches, nocturnal urinary incontinence or irritability.

Does Lamblia Infest the Gallbladder?—In one of two cases reported by Madinaveitia the colics were clearly caused by an echinococcus cyst and *Lamblia* was present in the duodenum. It was found in the duodenal bile, but not in the gallbladder specimen (during operation) nor in the discharged bile for several days afterward. Among eight cases, Cassoni's and Weinberg's tests disagreed in four and at operation each was found wrong in the same number of cases.

Revista Médica Latino-Americana, Buenos Aires

12: 1321-1491 (June) 1927

*Vulvar Pruritus. R. Araya and E. J. Roncoroni.—p. 1326.
Prostatectomy. J. J. Gazzolo.—p. 1340.
Torsion Dystonia. A. S. Marotta.—p. 1356.
Tuberculosis of the Eye. J. Lijó Pavía.—p. 1398.

Treatment of Vulvar Pruritus.—Epidural injection of from 10 to 20 cc. of sodium chloride solution, hypertonic serum or

1 per cent procaine hydrochloride solution is advised by Araya and Roncoroni for the control of vulvar pruritus. The same method could be used in coccygodynia, anal fissures, anal pruritus and vaginismus. In rebellious cases one might try first 5 per cent and then 10 per cent alcohol, injecting farther down for fear of causing a neuralgia in the first sacral nerves. Before resorting to pudic neurotomy, 90 or 95 per cent alcohol might be tried, as in trifacial neuralgia.

Revista Médica del Uruguay, Montevideo

30: 343-400 (July) 1927

*Streptococcus Infection. J. F. González.—p. 343.
*Synthalin. B. V. Fuentes et al.—p. 354.
Fernandes Figueira's Syndrome. A. Carrau.—p. 390.
Gangrene from Postoperative Thrombosis. E. Rodríguez Peinado.—p. 397.

Serum Therapy of Streptococcus Infection.—In six cases with symptoms of scarlet fever with streptococcic septicemia of various types, Dochez' serum gave excellent results.

Experimental Study of Synthalin.—In normal rabbits synthalin proved to be an active pharmacologic agent. The dose varied between 2 and 4 mg. per kilogram of body weight, fasting. Its action resembles but does not quite equal that of insulin. Varela, Collazo and Rubino warn as to its occasionally dangerous toxic effect.

Semana Médica, Buenos Aires

34: 121-180 (July 21) 1927

*Blood Transfusion. J. E. Ygarzábal.—p. 121.
Roentgen-Ray Diagnosis of Bone Syphilis. S. Satanowsky.—p. 125.
Multiple Ureteral Stones. J. Salleras.—p. 151.
Acriflavine in Gonorrhea. C. M. Matta and L. Cataldi.—p. 153.
Hemophilia with Purpura. W. T. Fotheringham and B. Palamedi.—p. 157.
Mishap Caused by Acriflavine. Carrillo and Barralt.—p. 159.

Priority in Introduction of Citrated Blood.—Ygarzábal publishes letters and other records to prove that Agote is entitled to the credit of having introduced the citrate method of blood transfusion on Nov. 9, 1914, in the Institute of Clinical Medicine of Buenos Aires. Agote's first report on the subject was published on Nov. 23, 1914.

34: 469-528 (Aug. 25) 1927

*Diagnosis of Neurosyphilis. C. Mainini and J. Renner.—p. 469.
Syphilis of Lung in Children. J. C. Navarro and E. A. Beretervide.—p. 471.
Psychotherapy in Vomiting of Pregnancy. A. Peralta Ramos and M. L. Pérez.—p. 477.
Homogenization of Sputum. A. F. Poiré and M. E. Arzeno Carranza.—p. 480.
Sarcoma of Lung in Children. A. Segers and R. S. Aguirre.—p. 517.

Serodiagnosis of Cerebrospinal Syphilis.—The test described by Mainini and Renner is based on the method used for blood in the Pasteur Institute of Paris (Hecht's method as modified by Levaditi-Latapie-Weinberg-Mutermilch). This test is easier, simpler and less time consuming than that of Wassermann, and the results are equally or more reliable. As the spinal fluid usually has no complement or hemolysins, an inactivated normal human serum is added to the specimen.

Deutsche medizinische Wochenschrift, Berlin

53: 1331-1374 (Aug. 5) 1927

Constitutional Therapy; Psychopathies. J. H. Schultz.—p. 1331.
*So-Called Antivirus of Besredka. W. Weichardt.—p. 1333.
Advances and Retrogressions in Epidemiologic Research. E. Friedberger.—p. 1334.
Typhoid Outbreak in Gollnow in September, 1926. F. Wolter.—p. 1336.
*Starvation Pancreas in Man. G. Jorns.—p. 1339.
Late Stages of Syphilis in Rabbit After "Symptomless Infection." R. Prigge.—p. 1340.
Scarlet Fever Protective Serum. F. von Bormann.—p. 1342.
Infraclavicular Tuberculous Infiltrate in Young Adults. H. Assmann.—p. 1343.
Patchy Pigmentation of Skin After Application of Heat. A. Buschke and M. Michael.—p. 1343.
Specificity of Male Sex Hormone. Magnus-Hirschfeld and B. Schapiro.—p. 1344.
Foam Baths. A. Fürstenberg and H. Behrend.—p. 1346.
History of Hasheesh and Opium. R. Spengler.—p. 1357.
Ethyl Chloride Eau-de-Cologne Anesthesia. E. Gohrbandt.—p. 1358.

So-Called Antivirus of Besredka.—By experiments with streptococci in broth culture, Weichardt convinced himself that a part of the arrest of development noted could be traced to the appearance of paralyzing split products of albumin, and that similar growth-checking substances could be produced in high concentrations from the different kinds of peptone. With the same filtrates in lesser concentration, the growth of the organisms may be stimulated. If chemically identified food material is used and work is done quantitatively, it may be shown that with Besredka's "streptococcus antivirus" in the correct dilution, split products that stimulate the growth of streptococci and diphtheria bacilli are present. The same bouillon cultures, undiluted, check growth. Perhaps, in parts of the body remote from the seat of infection, the dilution of broth culture is such that not checking but stimulation of the infectious agent takes place, as it does in experiments in vitro. As far as Besredka's antivirus is concerned, there is no question of specific bactericidal action.

Starvation Pancreas in Man.—From a survey of the literature and from his own observations, Jorns concludes that withdrawal of nourishment occasions in the human pancreas a decrease of the secretory parenchyma in favor of the island tissue, which is apparently more essential to life; the significance of the latter for carbohydrate metabolism is proved by the fact that the increase of the islands has as result an increased production of insulin. A disturbance of the insulin action or of the carbohydrate tolerance occurs, however, because with the lack of stimulation of the external secretory apparatus and also of the endocrine cell apparatus of the pancreas, the factor which regulates the blood sugar in alimentary hyperglycemia is missing.

Klinische Wochenschrift, Berlin

6: 1545-1592 (Aug. 13) 1927

Chronic Mercury Poisoning and Danger from Amalgams. H. Führer—p. 1545.
*Resuscitation by Artificial Respiration. O. Bruns.—p. 1548.
*Complications in Infectious Diseases of Children. C. Boenheim.—p. 1552.
Specificity. W. Weichardt.—p. 1555.
Active Pituitary Substances in Cerebrospinal Fluid. F. Siegert.—p. 1558.
*Treatment of Pernicious Anemia. G. Rosenow.—p. 1560.
Colloidal Chemistry Examples of Double Ring Phenomenon. R. Doerr and E. Berger.—p. 1562.
Zone Phenomena, Double Ring Phenomena and Their Genesis. L. Reiner and H. Kopp.—p. 1563.
Case of Lethargic Encephalitis with Initial Exanthem. M. Hohlfeld.—p. 1564.
Tachycardia; Its Treatment. E. Boden.—p. 1564.
Social and Industrial Hygiene. A. Seitz.—p. 1571.

Revival Through Artificial Respiration.—Burns investigated the possibility of creating a provisional circulation, using manual and instrumental artificial respiration. He used human bodies, still warm, and large dogs which had been killed by hanging or by suffocating with illuminating gas. With strong pulling of the arms and counterpulling of the legs the inspiration value in human cadavers was 200 cc. of air. The degree of ventilation could be raised to 350 cc. by blowing air into the lungs by means of a bellows and by using the Howard method for expiration. The intracardiac blood pressure varied between minus 12 and plus 20 cm. (column of water), according to the method of artificial respiration used. Bismuth oil, India ink, methylene blue and acriflavine were introduced, some into the arteriovenous system and some into the cavity of the heart. Bruns did not find any evidence of provisional circulation resulting from artificial respiration, since it was not possible to bring blood into the capillaries of the greater circulation from the arteries.

Nervous Complications of Infectious Diseases of Children and Vaccination.—Boenheim reports four cases of measles complicated by cerebral symptoms, one case of scarlet fever with slight ataxia and motor disturbance of the legs, two cases of whooping cough with encephalitic symptoms, one case of chickenpox with encephalitis. In the author's ninth case, the patient was vaccinated five days before meningitic symptoms appeared. Autopsy revealed tuberculous meningitis and areas of softening in the midbrain.

Treatment of Pernicious Anemia with Liver Diet and Irradiated Ergosterol.—Rosenow used the Minot and Murphy liver diet in a series of cases of pernicious anemia. The patients took the fare quite willingly, and did not complain of the monotony. Besides the diet, the patients received only

hydrochloric acid (10 to 15 drops before meals). In one case the treatment failed, in another there was improvement. In three further cases the author added to the treatment irradiated ergosterol in olive oil, 8 drops, three times daily, or 8 to 9 mg. of the activated ergosterol daily, after meals. The use of ergosterol seemed to favor remission, and the combination of dietetic and ergosterol treatment promises particularly good results.

Monatsschrift für Geb. und Gynäkologie, Berlin

77: 1-76 (Aug.) 1927

Termination of Ovulation and Determination of Age of Young Human Embryos. O. Grosser.—p. 1.
*Irrigation of Puerperal Uterus with Alcohol. J. Brock.—p. 3.
*Painless Births with Reenforced Uterine Contractions. H. Hoeland.—p. 5.
Primary Lesion on the Portio. H. Hinselmann.—p. 10.
Paradoxical Urinary Reaction to Insulin in Nondiabetic Subjects. P. Schneller.—p. 12.
Ultraviolet Rays in Gynecology. N. Neufeld.—p. 16.

Irrigation of Puerperal Uterus with Alcohol.—In Brock's experience prompt improvement has always followed irrigation of the uterus with alcohol in beginning septic uterine disease in the puerperium. A second irrigation has never been necessary. He uses 1 liter of table brandy, containing 40 per cent of alcohol. The alcohol removes the layer of mucus and is thus able to penetrate between the folds of the uterine wall. One should be sure that the uterus is already attacked, i. e., that the infection is not limited to the vagina, and the usual precautions against furthering infection of the adnexa (low pressure, etc.) must be strictly observed.

Painless Births with Reenforced Uterine Contractions.—Gellert's method (paracervical injections of procaine hydrochloride with epinephrine and of solution of pituitary, followed by anesthesia of the pudendal nerve, also combined with injection of solution of pituitary) was used by Hoeland, in whole or in part, in twenty-eight cases. The painless and rapid deliveries obtained by Gellert were not repeated. One child died during labor and two had to be delivered by forceps. A fourth sustained rupture of the tentorium and died three days later. Pain was diminished but slightly or not at all. Birth was accelerated in some cases.

Münchener med. Wochenschrift, Munich

74: 1399-1440 (Aug. 19) 1927

Tuberculosis Research. K. Turban.—p. 1399.
Course of Psychopathies. E. Kahn.—p. 1404.
Disease Heredity. H. W. Siemens.—p. 1407.
Infectious Etiology of Acute Disseminated Encephalomyelitis. H. Pette.—p. 1409.
Mortality of Ear Disease. L. Haymann.—p. 1412.
*Acute Necrosis of Pancreas in Child. E. Holzmann.—p. 1415.
Palpation of Uterus. M. Kaspar.—p. 1417.
Impressions of America. F. Müller.—p. 1420.

Acute Necrosis of Pancreas in Child.—Holzmann found in the literature three cases, which he reviews. His own case was in a boy, aged 3 years. Because of the extreme rarity of this disease in children, it was not considered in the diagnosis; at laparotomy there was not the characteristic sign of fat necrosis in the abdominal cavity, although at necropsy twenty-four hours later it dominated the picture. There was initial collapse of the child and at operation a sanguinolent effusion was present in the abdominal cavity. In explanation of the rapidly fatal course, it is suggested that the inactive, neutral ferment of the pancreas, trypsinogen, already within the gland, was in some way transformed into the powerful trypsin, in other words became activated, perhaps by means of bile, bacteria, bile mixed with bacteria or the enterokinase of the intestine, which had penetrated into the pancreas. Such penetration could easily occur if there was a common opening of the ductus choledochus and ductus pancreaticus, such as Vogel found in 10 per cent of his cases. In the case described, bile granules could not be demonstrated in the pancreas.

Zentralbl. f. Gynäkologie, Leipzig

51: 2009-2072 (Aug. 6) 1927

Connection Between Sedimentation Speed and Fibrinogen Content of Blood. S. Bruchsaler.—p. 2010.
Radical Operation of Malignant Tumors of Ovary. P. Schneider.—p. 2015.
Parotitis in Puerperium. M. Sinnecker.—p. 2024.
*Unusual Cause of Tubal Rupture. R. H. Ullmann.—p. 2032.
*Periodic Edema of Vulva in Pregnancy. R. Joachimovits.—p. 2036.
*Premature Separation of Placenta Following Measles. C. U. von Klein.—p. 2037.
Fatal Hemorrhage After Abortion. R. Mandelbaum.—p. 2041.
Id. G. Siefart.—p. 2042.

Tuberculosis as Cause of Tubal Rupture.—Ullmann reports a case of rupture of a fallopian tube, found on microscopic examination to be tuberculous. Pregnancy did not exist. A tuberculous focus elsewhere in the body could not be discovered. The woman recovered.

Edema of the Vulva Recurring Periodically in Pregnancy.—Since delivery a year and a half ago, a primipara experienced swelling of the labia with painful sensation of tension beginning with the onset of the menses (three week period) and lasting two days. She is now seven months pregnant, and the swelling and tension appear as before, every three weeks, although the menses are absent.

Premature Separation of Placenta Following Measles.—Klein's patient had an attack of measles in the sixth month of pregnancy. Two months later, on return from a four hour journey, hemorrhage set in with premature labor. The fetal heart tones ceased and a dead child was born. The death of the fetus appears to have been caused by bleeding between the uterine wall and the placenta. The explanation offered is partial separation of the placenta during the measles, encapsulation, and, finally bursting of the protecting adhesions from the jolting of the journey. After an infectious disease, if the child survives, the mother should be warned against subjecting herself to any shaking, and all traveling should be forbidden.

51: 2073-2136 (Aug. 13) 1927

Repeated Pregnancy in Amenorrhea from Roentgen-Ray Irradiation. C. Holtermann.—p. 2091.
Abnormally Long Duration of Pregnancy. F. Wittenbeck.—p. 2094.
Hemorrhage After Menopause and Ovarian Carcinoma. J. Schiffmann.—p. 2098.
Tertiary Congenital Syphilis. T. Hirsch.—p. 2100.
*Insulin Treatment of Pregnancy. A. Loeser.—p. 2103.
*Living Full Term Child After Abdominal Metroplasty for Uterus Bicornis. C. U. von Klein.—p. 2109.
Salpingostomatoplasty. H. F. Eberhard.—p. 2113.

Insulin Treatment of Pregnancy Toxicosis.—To conceive of insulin treatment of toxicosis of pregnancy merely as an attempt to lower the blood sugar is to misunderstand it totally, Loeser says. He explains the theoretical basis of insulin therapy in pregnancy as an attempt to restore to the liver the power, which it had lost through toxicosis, of fixing sugar as glycogen.

Normal Birth After Metroplasty for Uterus Bicornis.—One year and four months after operation for bicornate uterus, Klein's patient, aged 29, passed with safety through a normal labor and was delivered of a healthy child. The operation relieved the woman not only of a tendency to abortion, but also of dysmenorrhea and menorrhagia and of pain during coitus.

51: 2137-2200 (Aug. 20) 1927

Kielland's Prolapse Operation. H. Köhler.—p. 2180.
*Paratyphoid and Gallbladder Perforation in Pregnancy. C. Schmidt.—p. 2184.
*Benign Papilloma of Corpus Uteri. A. Schmechel.—p. 2187.
Supravaginal Amputation or Abdominal Hysterectomy for Fibromyoma? L. Kriwsky.—p. 2190.
Lock for Kielland's Forceps. K. Riediger.—p. 2198.
"Cesarean Section According to Portes." Kupferberg.—p. 2199.

Paratyphoid and Gallbladder Perforation in Pregnancy.—Schmidt describes the case of a woman, four months pregnant, with perforating cholecystitis. The fluid, which accumulated in Douglas' culdesac, contained the paratyphoid B bacillus. At operation (cholecystectomy) the peritoneum appeared to be unaffected and the temperature, which had been 39 C. for one day, promptly dropped. The pregnancy continued undisturbed and a healthy child was born at term. The mother's milk, stool, urine and blood, and the child's stool and urine were examined for the paratyphoid B bacillus with negative results.

Benign Papilloma of Body of Uterus.—Four years after the onset of the menopause, a woman had a vaginal discharge, resembling meat infusion, after coughing. The abdomen had increased in size in the last six months and there had been difficulty in urination. She had not lost weight. The uterus was found on examination to be as large as a child's head, and was removed. The uterine cavity, which measured about 10 by 9 cm., was entirely filled by a papillomatous tumor with two insertions. The structure of the growth, on both macroscopic and microscopic examination, was distinctly that of a papilloma with adenomatous inclusions.

Klinicheskaja Meditsina, Moscow

5: 519-569 (May) 1927

Legal Responsibility of Physician. A. P. Gubareff.—p. 519.
Diabetes Mellitus and Insulin. E. T. Zukerstein.—p. 526. C'td.
*External Pancreatic Secretions in Diabetes. B. A. Dubnova and T. A. Izigson.—p. 531.
Carbohydrate Combination in Diabetic Urine. G. M. Bajenow.—p. 537.
*Homosexuality and Manoilov's Reaction. A. C. Solovtzova and H. F. Orloff.—p. 541.
Use of Pel's Mammary Extract. E. P. Rasumova.—p. 547.

External Pancreatic Secretions in Diabetes.—A number of investigators, such as Allen, Macleod, Diamore, Weichselbaum, believe the insular apparatus to be entirely independent of the rest of the pancreatic gland, an organ *sui generis*. The presence of islands in the pancreas is explained embryologically by the fact that both elements develop from the same epithelium. Diabetes is caused by changes in the islands alone. Other authors believe in the functional relationship of the two. To test the point Dubnova and Izigson studied pancreatic ferments in the duodenal juice of fourteen patients with diabetes. They came to the following conclusions: 1. Study of duodenal ferments throws considerable light on the condition of the pancreas in diabetics. 2. In grave cases of diabetes, the external pancreatic secretion is decreased. 3. The fermentative activity of the pancreas falls with the lowering of the patient's condition. 4. Parallelism in the fall of the three ferments does not exist. 5. Diastase suffers most commonly, next lipase and very rarely trypsin. Diastase was found diminished in the blood, urine and excreta. Histologic studies showed pathologic changes in the entire parenchyma of the gland as well as in the islands of Langerhans.

Homosexuality and Manoilov Reaction.—The authors applied Manoilov's color reaction of the blood serum in the study of twenty cases of homosexuality. Female and male blood each give a characteristic reaction to the indicators potassium chloride and calcium chloride. In homosexual persons the reaction is reversed. All of the cases studied gave a reverse Manoilov reaction. Homosexuality seems to depend on some profound biochemical changes affecting all of the body cells.

Mikrobiologicheskiy Jurnal, Leningrad

5: 1-93, 1927

Binding Properties of Dysentery Toxin and Antitoxin. H. Schlossberg and F. W. Wichman.—p. 1.
*Bacteriemia in Diphtheria. J. J. Lieberman and N. P. Ivanoff.—p. 10.
Rôle Played by Reticulo-Endothelial System in Defense Reactions of Organism. A. J. Alymow and B. M. Gurevich.—p. 18.
Treatment of Coccidiosis. Yakimoff, Kondriawzev and Krassilnikoff.—p. 30.
Serologic Differentiation in Paratyphoid-Enteritidis Group. M. N. Fisher and T. Grossman.—p. 38.
Preservation of Complement. S. T. Ginzburg and V. C. Kalinin.—p. 52.
Streptococci in Throats of Scarlet Fever Convalescents. M. I. Kanevskaja.—p. 49.

Bacteriemia in Diphtheria.—The authors injected guinea-pigs with virulent diphtheria bacilli, employing the subcutaneous, the intradermal or the intraperitoneal route. Diphtheria bacilli were recovered in the blood and in the internal organs both in vivo and at necropsies. The bacilli made their appearance soon after the injection. Their virulence was not lowered by passage through animals. The authors make the deduction that in human cases which prove fatal in spite of the timely administration of large doses of antitoxic serum, better results may be obtained by the use of serums from animals immunized by the use of toxin and of bacilli.

Russkaya Klinika, Moscow

7: 669-821 (May) 1927

Constitution and Mechanism of Metabolism. N. Kabanoff.—p. 669.
*Acute Leukosis. E. Tareev.—p. 678.
*Acute and Chronic Leukemias. P. A. Bargash.—p. 695.
Aplastic Anemia. N. Stoczik and A. Galperin.—p. 716.
Aleukia of Frank. F. D. Wulf and V. T. Rachman.—p. 725.
Pseudoleukemias. E. K. Kalantorova.—p. 735.
Isohemo-Agglutinating Qualities of Blood and Wassermann Reaction. Z. Gringot and A. A. Melkich.—p. 752.
Relationship of Phosphorus to Carbohydrate Metabolism. C. A. Pospelov and G. Rajevskaja.—p. 758.
Effect of General Anesthetics on Nervous System. N. Tschetverikoff.—p. 766.
Pathogenesis and Treatment of Inguinal Hernia. A. A. Ssozon-Jaroschewitsch.—p. 775.

Acute Leukosis.—On the basis of two clinically observed cases and review of the literature, Tareev divides all cases of acute leukosis into two groups: diphtheritic pseudoscorbutic, and anemic septic. The first runs an acute infectious course and is characterized by a hemorrhagic diathesis and ulcerative stomatitis. Clinically, it must be differentiated from typical scurvy, from purpura haemorrhagica, and from agranulocytosis. From hemorrhagic aleukia the differentiation is possible only by blood examination. The second group is characterized by slower course, irregular fever and inconstant enlargement of the spleen and lymph glands. It must be differentiated from pernicious anemia, sepsis and hemorrhagic aleukia. The majority of so-called leukanemias should really be classed as leukosis. In the clinical picture of acute and subacute leukosis, he emphasizes increase in the color index, absence of increased hemolysis, early dyspnea and tachycardia. The morphology of the leukocytes in the blood smears determines the exact diagnosis.

Acute and Chronic Leukemia.—Bargash believes that acute and chronic leukemia are variants of the same nosologic entity. The causative agent is unknown but is probably of septic nature. The relation of acute leukemia to the chronic form is comparable to the relation of acute to chronic sepsis. In every case of ulcerative sore throat accompanied by high temperature, especially if accompanied by hemorrhagic diathesis, a blood examination should be made. The character of the lymphatic or myelogenous deposits in the liver does not determine the variety of leukemia. In the differential diagnosis of the lymphatic and myelogenous varieties, the search for protease and oxydase in the blood, in tissue obtained by puncture of the sternum and by biopsy as well as in postmortem histologic examination is most important.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

71: 249-376 (July 16) 1927

*Acrodynia. J. M. Wiggelendam and T. Kuiper.—p. 250.
*Development of Inferior Vena Cava in Man. C. van Gelderen.—p. 266.
*Biologic Diagnostic Aid in Smallpox. A. C. Ruys.—p. 275.
Congenital Atresia of Fallopian Tube. R. Finaly.—p. 277.

Acrodynia.—Wiggelendam describes two cases of acrodynia in a brother and sister, aged 4 and 2¾ years respectively, also four cases with a number of similar manifestations, in adults, one the grandmother of the children mentioned, the others in a family living in the same village. In the children the illness, beginning with apathy, loss of appetite, weakness, and irritability, followed impetigo, which had yielded promptly to treatment. Wiggelendam mentions particularly the position assumed by the children in bed—he found them "curled up" he says, "like new-born kittens." In the course of the first month the symptoms included rhinitis, bronchitis, conjunctivitis, abdominal pains, diarrhea and cystitis. In the younger child, the exanthem on the hands and feet, red, punctate, later vesicular and confluent, with swelling and intense itching, set in at the end of four or five weeks and spread over the extremities and trunk. The abdominal reflexes were absent; Babinski's reflex was present. There was severe sweating and rapid, weak, pulse. The child died about four weeks from the appearance of the exanthem. The older child suffered similarly, but less severely. He took food more readily and did not become emaciated; sweating did not occur. A diet rich in vitamins was prescribed. Epinephrine, 0.3 cc., was given subcutaneously on alternate days;

on the other days a nonspecific bacterial autolyzate was injected intramuscularly. Under this treatment the child improved. The adults most severely affected were aged persons. In only one did the exanthem appear. The neurologic aspects of the disease are discussed at length by Kuiper.

Development of Inferior Vena Cava in Man.—From a series of comparative embryologic studies, van Gelderen states that the (posterior) inferior vena cava is made up as follows: pars hepatica, hepatosubcardinal anastomosis, pars subcardinalis, subcardinocardinal anastomosis (pararenal anastomosis) on the right, pars postcardinalis (with inclusion of the dorsal portion of the venous circle around the kidney and its ureter). The azygos and hemiazygos veins and the ascending lumbar veins are new, young supracardinal veins. The supracardinal veins do not contribute to the formation of the inferior vena cava. The internal spermatic (or ovarian) veins represent the caudal portions of the subcardinal veins.

Skin Reactions in Allergic Guinea-Pigs as Aid in Diagnosis of Smallpox.—In a recent smallpox epidemic, Ruys repeated Gins' experiments on a larger material. Guinea-pigs were vaccinated with cowpox lymph. Twenty-four days later the animals were inoculated in the skin with cowpox lymph, material from smallpox patients and fluid from the vesicles of chickenpox. The fresh smallpox crusts had been powdered in a mortar and then mixed with a small quantity of glycerin and let stand twenty-four hours. This was rubbed into a network of scarifications in the shaved skin. At the end of twenty-four hours the cowpox and the smallpox material caused a distinct, red, slightly edematous reaction over the site of the inoculations in five of eight guinea-pigs on the first trial, in all the animals on the second trial, made after a second vaccination of the three insensitive animals. On the sites where the chickenpox fluid had been rubbed in, there was only a slight reaction over the scarifications.

71: 585-720 (Aug. 6) 1927. Partial Index

Hyperthyroidism and Metabolism. C. Baumann.—p. 592.
Ascaris and Intestinal Perforation. R. Finaly.—p. 598.
*Influence of Radium on Developmental Stages of Tar Carcinoma. C. Bonne and G. Stoel.—p. 603.
*History of Scurvy in Holland. M. A. van Andel.—p. 610.
*Spectacles in Old Carvings. H. Weve.—p. 649.
History of Prostheses. A. J. van der Weyde.—p. 661.

Influence of Radium on the Developmental Stages of Tar Carcinoma.—In experiments on mice, Bonne and Stoel studied the effects of radium on normal skin, and on the skin as affected by applications of tar (hypertrophy, papilloma and carcinoma). In all stages the first change was the disappearance of mitoses; the fewer the applications of tar, the more rapid this was; it was seen earliest of all in the normal skin. Later, abnormal mitoses appeared; in amount these varied directly with the strength of the irradiation; they appeared more rapidly the greater the number of tar applications, most rapidly in the carcinomas and papillomas. The next change—necrosis—likewise paralleled in the speed of its appearance the number of applications of tar—appearing latest in normal skin—and the strength of the irradiation.

Old-Time Physician's Views on Scurvy.—In a list of foods for ships' crews drawn up by De Wind in 1760 are included 32 gallons of lemon juice per hundred men and one pound of tamarinds per man per month, beside fresh onions, cabbages and turnips "for Sunday soup." "Experience' he wrote, "teaches that no medicine is able to destroy this evil (scurvy) at sea without fruits and vegetables." Van Andel thinks that the facts at which the physicians of the past arrived through observation and experience are not sufficiently appreciated.

Spectacles in Old Carvings.—Weve has collected a number of interesting facts relating to the representation of eyeglasses in the plastic arts. The oldest representations date from 1352, they are found in frescos of Tommaso da Modena. The earliest appearance in connection with the plastic arts is about 1390, when the sculptor Claus Sluter, at the court of Burgundy, provided the prophet Jeremiah with a pair of bronze spectacles. In carvings only a few dozen, in all, are found. The period about 1500 is the richest, and the greatest number are the work of Netherlanders. There are many more representations of spectacles in carvings in wood than in stone or marble. St. Peter, St. Paul, St. Matthew, St. Mark, St. Luke and St. James have all been represented spectacled.

Hygiea, Stockholm

89: 625-656 (Aug. 31) 1927

*Transmission of Nerve Stimulus to Organs. C. G. Santesson.—p. 625.
Case of Bothriocephalus Anemia. T. Lind.—p. 637.
Case of Spontaneous Indirubinuria. E. Sahlgren and E. Wolff.—p. 645.

Transmission of Nerve Stimulus to Different Organs of Body.—Santesson reviews Loewi's investigations on the transmission of nerve impulses to the muscles of the heart. The results support the view that excitation of organs through the nerves depends on the formation of specific organic substances, the effect of this complicated chemical process varying according to the physiochemical conditions in the organ.

Ugeskrift for Læger, Copenhagen

89: 587-606 (July 7) 1927

*Serum Sickness. H. Heckscher.—p. 587. C'en.
Weber's Law. H. Rønne.—p. 594.
*Epidemic of Paratyphoid. C. A. Blume.—p. 599.

Serum Sickness.—Referring to serum sickness after the first injection, Heckscher considers, one by one, the many different symptoms seen during the course of the disturbance, then treats of the incubation period of serum sickness, its duration, and the circumstances determining its frequency. He states that moderate serum sickness affords an extremely favorable prognosis in diphtheria. On reinjection, graver acute reactions sometimes occur, especially with a short interval between injections and with intravenous (or intraspinal) injection. Serum sickness seems to respond to a so-called nonspecific protein therapy. The disorder is not of sufficient importance, he says, to contraindicate the use of serum.

Epidemic of Paratyphoid in Household and Treatment of Carriers.—Blume reports five cases of paratyphoid in one household, resulting from failure to diagnose the original case. In this instance and in ten other reported cases of carriers, the disease did not spread further. He finds proper instruction in prophylaxis effective, when the carriers themselves are interested.

89: 785-802 (Sept. 1) 1927

*Ozena. V. Schmidt.—p. 785.
*Atypical Encephalitis Epidemica. A. V. Neel.—p. 789.
"Sanocrysin" Treatment of Pleuritis. K. Secher.—p. 795.
Value of Intraperitoneal Drainage. H. S. Biilmann.—p. 798.
Practical Extension Bandage. A. Sennels.—p. 798.

Ozena.—Schmidt describes a case of genuine ozena in a girl, aged 18. He says that the greatest problem in ozena is its uncertain etiology. There are indications that it is an infectious disease dependent on certain unexplained hereditary pathologic conditions. The best results to date follow surgical treatment, but permanent recovery is not assured.

Masked and Atypical Cases of Epidemic Encephalitis.—Neel divides his material, derived from a total of 1,200 spinal fluids, into three groups: (1) cases diagnosed as encephalitis; (2) those with doubtful diagnosis of encephalitis or later probable diagnosis of encephalitis; (3) those without diagnosis of encephalitis until examination of spinal fluid showed encephalitis to be certain or probable or not to be excluded. He reviews the relation between the different groups in the different years, discussing changes in the spinal fluid, symptoms and picture according to prominence of different symptoms. Finally he presents the results of systematic examination of the brain in 334 cases in which encephalitis could not be excluded with certainty as the cause of death; signs of inflammation or changes in blood vessels were seen in 148. His evidence indicates extensive latent encephalitic infection in Denmark in recent years.

Correction.—In The Journal, November 5, p. 1644, the words Presse Médicale, Paris, should appear above the line reading "**35:**961-968 (Aug. 3) 1927."